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PRODUCING REFINING PIPELINE ENGINEERING MARKETING

Published Every Thursday TULSA, OKLAHOMA, MAY 26, 1932 Subscription $6.00 a Year

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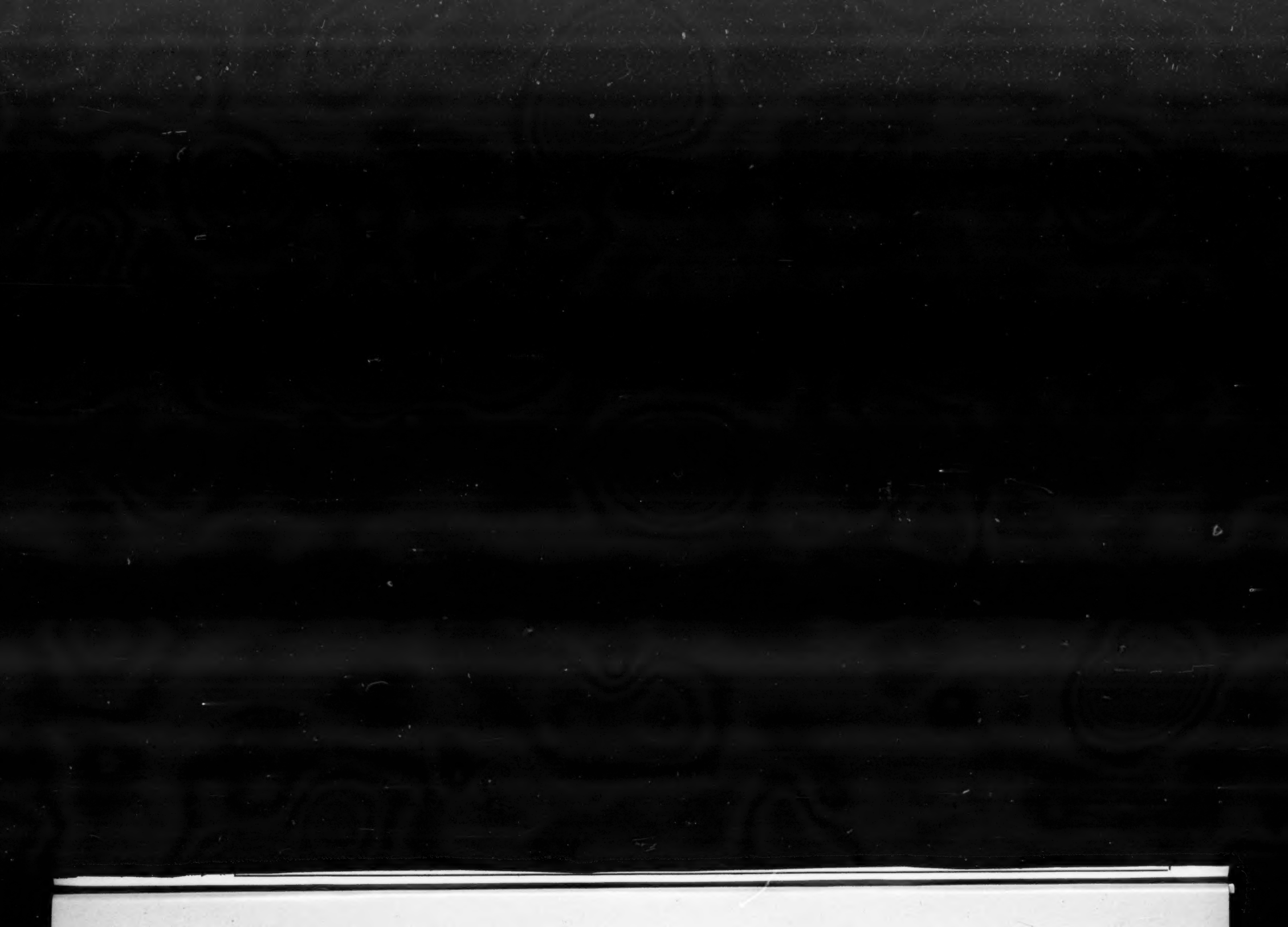

General Wahr

The OIL and GAS JOURNAL

PRODUCING REFINING PIPELINE ENGINEERING MARKETING

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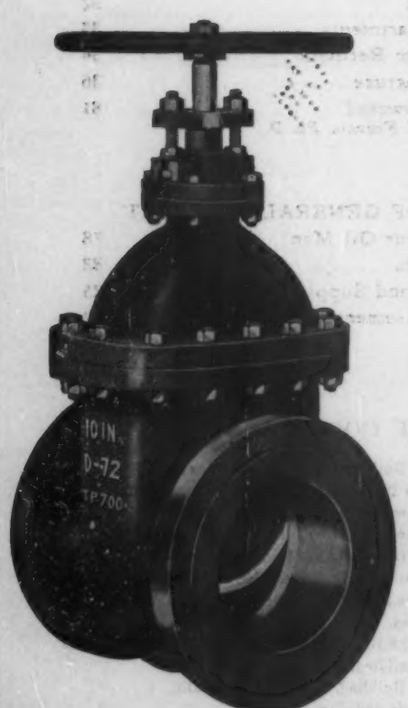

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Outlook Shows Continued Improvement

Highest production in 1931, week ending Aug. 8, average daily output 2,551,807 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

Larger Decrease in Consumption Than Expected Is Important Factor Deserving of Most Careful Consideration

By Andrew M. Rowley

Lowest daily average crude oil production in the United States during 1931 was for week ending Sept. 5, with average output of 1,736,007 bbls.

Further improvement in conditions affecting the petroleum industry were recorded during the past week. The situation in California is clearing and operators there are confident a substantial reduction in production will be made during this week. The executive committee for equitable curtailment has set a figure of 476,700 barrels daily for the state with a good possibility this figure will be approached this week. A substantial drop in production in Oklahoma is expected this week as operators have taken most of this month's allowable already.

It is of the utmost importance at this time that producers and refiners realize there has been a far greater decrease in consumption than had been expected. As a concrete example, the business of one gasoline pipe line from May 1 to May 20 was 30 per cent less than companies interested in the line had estimated previously it would be. Runs to stills must be curtailed further and crude oil producers must hold their output to this lessened demand.

Field operations are showing a steady increase in many areas. One manufacturer of equipment stated that during the past two weeks he had received three telegrams ordering equipment to be sent by express. As the material weighed between 300 and 400 pounds for each order, it was evident the buyer was in a hurry to get it. New locations in East Texas last week neared the high record for that field while increased activity is evident in West Texas, the Gulf Coast, Southwest Texas and Kansas.

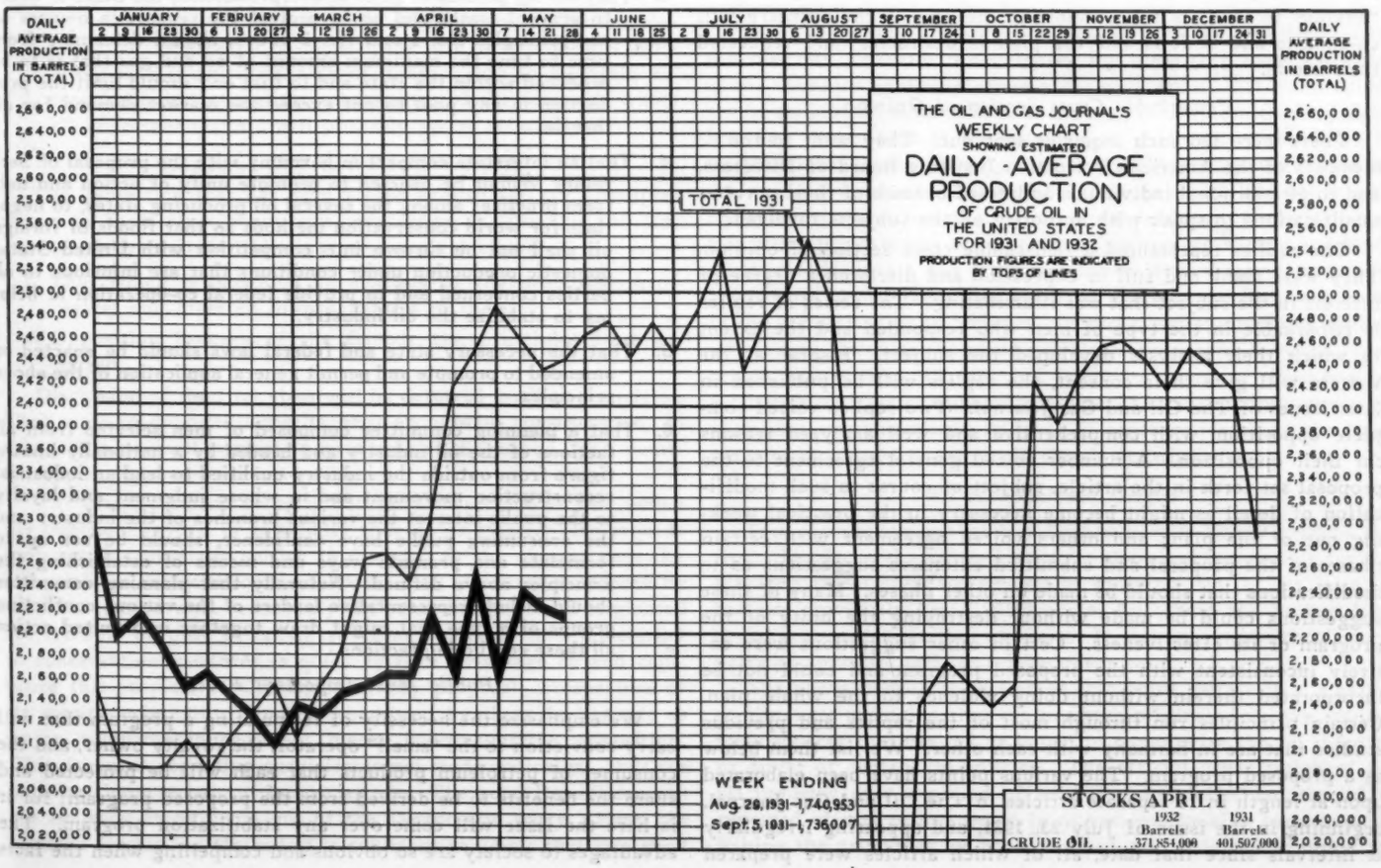
The matter of consumption is of especial importance and must be given more consideration at this time, probably, than ever before. The increase enjoyed last year in the face of general business conditions was a most encouraging factor but the fact remains the drop so far this year has exceeded estimates of even those inclined to be pessimistic. It is of the utmost importance that the supply, both of crude and refined oils, be kept below demand so that stocks, which are still burdensome, may be reduced. The industry can so plan its operations to achieve this object and thereby strengthen the price structures.

CRUDE OIL PRODUCTION IN THE UNITED STATES

Estimated daily average production for the week ending May 21, and a comparison with previous week and one year ago follows:

	May 21	May 14	May 23, 1931
Oklahoma—			
Oklahoma City	99,530	116,315	143,360
Seminole-St. Louis	121,815	119,630	160,490
Remainder of State	208,975	206,465	238,100
Total Oklahoma	430,320	442,410	541,950
East Texas—			
Lathrop	127,050	124,024	61,512
Kilgore	103,459	103,305	124,250
Joiner	107,573	105,615	118,000
Total East Texas	338,082	332,944	303,762
West Texas	184,538	184,310	207,850
North Central Texas	77,295	75,448	80,937
Texas Panhandle	52,812	51,652	59,002
East Central Texas	56,960	56,835	56,742
Gulf Coast Texas	109,993	107,595	150,367
Southwest Texas	59,205	60,146	69,202
Total State of Texas	878,885	868,930	927,862
Kansas	95,870	96,220	106,270
North Louisiana	29,430	29,520	38,890
Gulf Coast Louisiana	41,136	37,585	31,393
Arkansas	34,365	34,385	46,660
Eastern fields	119,000	119,000	110,500
Rocky Mountain area	86,356	82,051	98,205
California—			
Santa Fe Springs	64,750	66,000	72,250
Long Beach	81,750	81,500	86,500
Playa Del Rey	18,750	19,000	29,000
Elwood	16,750	16,500	34,250
Kettleman Hills	56,000	58,000	44,000
Remainder of State	266,000	277,000	271,500
Total California	504,000	518,000	537,500
Total United States	2,219,362	2,228,101	2,439,230

→ Decrease, 8,739 Bbls. Daily ←



Program Formed for the Oil Industry

Comprehensive Plan Presented for Permanent Stabilization. Opinions Received From Various Groups Interested

By Earl Oliver

A COMPREHENSIVE program for the petroleum industry on which all conflicting factions can unite is essential to the industry's economic recovery. Especially is such a program necessary in view of the enlarged freedom of action discovered in the state legislative bodies by the recent decision of the United States Supreme Court in the Champlin case that went up from Oklahoma. That decision has been hailed as a boon to the oil industry. It is, however, nothing more than a decision giving to the state legislative bodies greater freedom of action to legislate and control this important industry. Whether or not that decision will result in benefit to the industry will depend entirely upon the wisdom that guides the state legislative bodies in their respective efforts. Without doubt the oil industry will now be regulated. In the event a sound program is evolved and a public understanding is cultivated, the industry will have good reason to expect sound legislation; but without such program or public education weird methods of control may be expected.

In the further effort to evolve a stabilization program fair to the consuming public and equally fair to all factions of the petroleum industry, and one behind which there might be reasonable hope of rallying the united effort of all factions of the oil industry, Mr. Rowley of The Oil and Gas Journal mailed to 136 leading oil company executives, officials of government, lawyers, royalty owners, independent producers, petroleum engineers, and professors of petroleum engineering in great universities, a pre-print of the editorial "Remove the Cause" and the questions and answers propounded by the writer under the caption "Oil Industry's Problems and Remedies," (both published in The Oil and Gas Journal of April 21), with a statement that The Oil and Gas Journal is "anxious to lend its full support to the plan if the industry will co-operate and if it is felt the plan is desirable," and requested their views.

Remarkable Cross Section of Opinion

There were 136 such inquiries sent out. They went to the 72 members of the American Petroleum Institute Board of Directors, and to 64 additional individuals addressed because of their peculiar qualifications to speak with authority on the subjects involved.

The replies represented a remarkable cross section of opinion. They were frank and full in expression and disclosed a degree of interest in the subject that was illuminating. The series of replies is remarkable in the type of men who responded and the extent to which their analyses developed the subject. Insofar as the writers will give their consent, the replies will be published in later issues of The Oil and Gas Journal. Two replies voiced complete opposition, with comprehensive and well analyzed reasons for their opposition. A number voiced general agreement to the proposal set forth in the article, subject of course to such modification of detail as might become necessary in the practical working out of the plan; and others voiced agreement with certain phases of the proposal and submitted extensive suggestions as to modifications that should be made on other phases. Many of these suggestions could be made without destroying the unity of the program or its effectiveness. Certain other suggestions were entirely inconsistent with the proposed program and could not be incorporated therein without doing violence to the whole plan. Certain principles run through most of the replies and previous studies that are in harmony with each other. We list them below as a proposed program. The various points have been elaborated upon at length in 14 separate articles in The Oil and Gas Journal, beginning in the issue of July 23, 1931, and appearing irregularly at intervals since that date, all of which articles were prepared either in collaboration with Judge W. P. Z. German or by the present writer alone. The proposed program is not submitted as originating with the writer. It is merely a collection of ideas, gathered here and there from men of experience, that appear to harmonize each with the other and to do justice to the various conflicting interests.

Program For the Petroleum Industry

The proposed program is as follows:

1. **That each landowner or his assigns is entitled to an amount of oil and/or gas from the common reservoir equivalent to the extractable oil and/or gas contained in his land, and should be protected in the enjoyment of that right.**

2. **That the pressure, or force of expulsion, contained in the reservoir is a common attribute of the reservoir and cannot be utilized to its greatest advantage except as it is treated and controlled as a single combined force. It should be conserved to the common interest of the several owners, and its dissipation should not be permitted except as it is efficiently utilized in driving oil and gas from the reservoir rock to the point of extraction. That the pool should be so developed and operated as to effectively utilize this force and promote most complete extraction at a minimum of cost, conserving the forces native to the reservoir to that end, with each owner entitled to his ratable share of oil and gas from the common reservoir according to the standard set out in principle No. 1 and made available to him at a time and in quantities consistent with his needs, in so far as the same can be safely and equitably done within the limit of the known reserves and available facilities and the right to a like degree of enjoyment of them by other owners in the same pool.**

3. **That during periods of general overproduction, the State in order to prevent waste and/or to protect the respective owners as per principles No. 1 and No. 2 above, should determine from time to time the maximum amount of oil and gas that is to be produced within the state and to that end should limit the production in any pool to not exceed the market demand for oil therein.**

4. **That an interstate compact in harmony with the proposal of Secretary Wilbur be enacted to promote unity of action and uniform practices among the several oil producing states, to negotiate for world conservation methods so that floods of foreign oil shall not be thrown into competition with United States domestic production under conditions that are injurious to all parties concerned and to provide federal co-operation in helping to stabilize the oil industry.**

5. **That the necessary state and federal laws should be enacted or amended to promote and permit general application of the above principles.**

6. **That a planning committee composed of men selected from all factions of the oil industry and headed by a nationally known figure from outside the industry qualified to lead an industrial reconstruction movement and in whose judgment and loyalty to the public interest the various branches of the industry and the consuming public have confidence, should be set up to formulate and promote ways and means of establishing the principles above defined. Naturally that planning committee should include representative leaders of the various conflicting groups of a type that might draw together into united action all those conflicting factions.**

Public Most Important Factor

We emphasize the necessity of formulating a program that will carry conviction to the "small" operator, the royalty owner, and the consumer of petroleum products that each will be protected and share the benefits to be derived from the proposed program; for it is here the issue will come over any stabilization program. The advantages to society are so obvious and compelling when the facts

are understood that an intelligent campaign of education, setting forth the facts through appropriate agencies in an understandable manner should develop a sympathetic public opinion toward the program.

The need of exercising care in this respect was forcefully emphasized in the Texas legislative attempt of last year, and was reemphasized in the more recent California effort. The circumstances surrounding the Texas attempt are sufficiently well known to justify no comment here, but those relating to California are not so well known. Perhaps in neither case was the proposed legislation a satisfactory solution, but in both cases an overwhelming majority of the oil industry favored it, hoping it might bring relief—all of which explodes the fallacy that education of the oil industry alone is adequate.

If results in these two states prove anything it is that a sympathetic public sentiment outside the oil industry must be developed in support of any program before the same can be enacted. An unusually well informed citizen of California, replying to a letter requesting information respecting the Sharkey Bill, writes:

> "I think there is no doubt that the direct reason for the defeat was that the vast majority of the voters knew practically nothing about the bill and were influenced largely by adverse propaganda having practically nothing to do with the real issues. Two phrases and one cartoon undoubtedly influenced more votes than all the intelligent reasons that could be set forth. The phrases were 'Monolopy' and '30-cent gasoline'. The cartoon was of an enormous shark (ey) in pursuit of a number of small fish labeled 'independent producer', 'independent service station', 'independent refiner', 'landowner', etc.
>
> "Replying to your second question as to the attitude of the California oil industry towards this measure—the major companies and a great number of the independent companies were for it, but a few of the smaller so-called independent companies opposed it very violently. While I am by no means on the 'inside' of such matters, I believe that the most active opposition came from the few companies which have most completely failed to co-operate in voluntary curtailment.
>
> "Referring to the second paragraph of your letter, I should suggest that the greatest obstacle in the way of appropriate legislation is the ignorance, lack of interest, and to a certain extent prejudice toward the oil industry of the voters to whom all important matters will probably go by referendum."

Classes of Opposition to Principles

The opposition that has been voiced against the six principles above set forth since their first publication in The Oil and Gas Journal, July 23, 1931, falls into two general classes:

1. That which is based on an analysis of the proposals themselves and directed toward defects in them.
2. Opposition because of the friends the principles have acquired.

Discussion of the first class will be deferred until later acticles. That class of opposition merits most thoughtful consideration. In this article we shall attempt to treat only of the second class, namely: opposition based on fear and prejudice.

The average human being is naturally suspicious of that which his opponent favors, or especially that he originates. He regards each act as potentially selfish in design. At the present time the consumer or the small operator looks upon measures sponsored by what he considers the "monopoly" as being designed and originated for the sole purpose of taking advantage of him. The opposition to conservation measures is quick to take advantage of and capitalize this suspicion. Consequently any proposal, irrespective of its merits, originating from or sponsored by those he regards as major companies immediately meets insurmountable opposition. This comment regarding suspicion is not made critically. It is the familiar characteristic of human nature. The good Republican can see no good thing come out of the Democratic party. Even the partisan Baptist or Methodist is reluctant to admit that any good thing can originate in another denomination. Certain of the opposition to the six principles described falls within that class by virtue of the fact that the principles have received endorsement from certain of the so-called major companies, as they also have received endorsement from an innumerably greater number of "independents". But endorsement by the "independent" does not cause fear, whereas endorsement by the majors does do so. However, because of the vast leaseholdings of the major oil companies, it is obvious no conservation policy can be successfully prompted that does not have their co-operation and approval. For that reason we are delighted that the principles above set forth have received their formal approval as they did at the A. P. I. meeting in Chicago last November.

Nevertheless, in order that that program be not defeated by prejudice due to the converts it has acquired, we believe the early history of the effort and development of the principles should be made clear at this time.

Early History of Efforts

Without any intent to disparage the work of others, we suspect that no one will question the statement that Henry L. Doherty has been the greatest single contributor to the petroleum conservation movement as at present developed. His prolonged and intensive fight for unit operation is well known, as is also his contribution to the sum total of human knowledge regarding the function and condition of gas in the reservoir. The part he played in the establishment of the Federal Oil Conservation Board is not so well known, but it is equally important. The coolness and lack of sympathy with which his efforts were received by the major companies, and by the American Petroleum Institute especially, preclude any suspicion that unit operation or petroleum conservation as now urged originated in that quarter. It is true that Messrs. W. N. Davis, W. S. Farish, E. B. Reeser and others, all active in the American Petroleum Institute, were early and earnest exponents of unit operation, but they did not receive the support from their fellow executives in that organization necessary to give momentum to the movement. We speak of the American Petroleum Institute merely because it represents in the public mind the organized oil industry and the forces that control it.

The Federal Oil Conservation Board with its excellent work followed Mr. Doherty in developing the ideas that form the basis of the above principles. Certainly the members of that board could not be considered monopolistic or lacking in devotion to the public interest. Then came E. W. Marland, as chairman of the A. P. I. Gas Committee, who promoted the study of the function of gas in the production of oil. Out of that study, in which the writer was chairman of the technical sub-committees, and out of a unit operation study promoted by the American Institute of Mining and Metallurgical Engineers and from association with the gentlemen and movements named the writer gathered many of the ideas set forth in the six principles enunciated. In those two engineering studies were engaged several hundred petroleum engineers, lawyers, executives, government officials, and scientists. Many of these had no affiliation with major companies and yet the trend of opinion among them was overwhelmingly in favor of conservation along the lines we have attempted to set out in the above principles.

No Monopolistic Origin

That observation applies to all six principles except perhaps the first. Insofar as the writer knows, he alone was responsible for the acreage content standard set out in principle No. 1. At least he had not previously heard it advocated by others and he had long urged it as a stabilization measure. It was an outgrowth of many years of appraisal and land department work.

The above history is recited at this point merely in the effort to eliminate suspicion that the program originated in any manner from sources that desired or hoped to monopolize the oil industry or direct or control its policies. The official organization of the oil industry over a period of several years, failed to respond to repeated efforts to interest it in movements looking toward establishing the principles we have outlined, and only did so under the

pressure of economic forces at its annual meeting in November, 1931, at Chicago. The "new conception of oil field development" there adopted was a prior American Institute of Mining and Metallurgical Engineers activity. Consequently, the program we are proposing must be absolved from any monopolistic origin. This history is mentioned reluctantly and with no spirit whatever of criticism for past omissions on the part of any organization purporting to lead the industry—but it is recited, instead, solely for the purpose of attempting to absolve from prejudice a program now looked upon with considerable favor by many inside and outside the oil industry.

The manager of a strong, successful and influential Independent Mid-Continent Company, when given the above paper to criticise, after reading same said, "I am 100% for your principles of operation and development. Their soundness is self-evident to one acquainted with the oil industry. To object to them is asinine. But I fall into your second class of objectors. I fear the fellows in control of the "Big Companies." I like them personally. Many of them are my friends—but there is something gets into the average fellow when he acquires power that causes him to lose his sense of justice and perspective. Of course, you might safeguard that through your planning committee. Now if you could get Calvin Coolidge to head up that committee—and it wouldn't be any too little a job for Calvin either"—and then he went off into day dreaming. But, his remarks are food for thought. Mr. Coolidge appointed the Oil Board—the Oil Industry is best qualified of any to lead the industrial world out of the depression. The way to do it is well known, and no task is more worth while. The only thing needed to lift it out is public confidence in its leadership.

To stimulate thought on this subject, replies to Mr. Rowley's letter both in opposition to the views expressed in the editorial and articles of April 21, and those favoring them will be published with appropriate comments in succeeding issues of The Oil and Gas Journal in so far as the writers consent to their use in this manner.

OLIVER HAS REAL BACKGROUND AS AID IN FORMULATING PLAN

By Andrew M. Rowley

When a man resigns a lucrative position of high responsibility with a large oil company solely that he might be free to support principles he felt to be for the best interests of the petroleum industry as a whole, he must be intensely interested in those principles. Especially when the president of the oil company desired him to retain his position and the oil industry as a whole did not at that time feel the life of the business depended upon the adoption of those principles. Earl Oliver is the man who resigned that position and he still is working for the adoption of those principles. His article in this issue gives the comprehensive program for the petroleum industry.

If, at his birth, a plan of education had been made designed to best fit Mr. Oliver with the qualifications needed in formulating this program for the petroleum industry, it could hardly have been different from the experience he actually has had. He was born on an oil lease near Karns City, Butler County, Pennsylvania, in 1878—the son of an oil well pumper and small producer who lived on the lease and with the assistance of his growing sons operated the wells in which he was interested so long as times were good, and at periods when times were bad the father was employed elsewhere as an oil field worker. Mr. Oliver, therefore, started out firmly impressed with the viewpoint of the small producer.

He grew up around and among oil wells. At an early age he became an oil well pumper, successively passing through the various stages of pumper, lease roustabout, tool dresser, driller, drilling contractor, production superintendent, and small producer, with an occasional oil property appraisal assignment—all in the fields of Pennsylvania, West Virginia and Kentucky. These activities were interspersed with those of securing an education, which was finally topped off with a law course in Transylvania College, of Lexington, Ky., in 1908-1910, which awarded to him the degree of Bachelor of Laws.

Earl Oliver

Upon the completion of this course Mr. Oliver came to Bartlesville, Okla., with the Central Fuel Oil Co. (a George C. Priestly consolidation) in the land department and was chiefly engaged in the matter of oil property and oil company appraisals. He resigned this position in 1914 to undertake an effort to promote unit operation of the Osage Indian and United States public lands, although the term "unit operation" was not coined until a later date. Several years were spent in this effort but the leaders of the industry frowned then upon unit operation as they later did when Mr Doherty made the term famous.

Finally abandoning this effort, Mr. Oliver went to South America for the Crew Levick Co. under William Muir, of Titusville, to investigate properties in Colombia, and later became superintendent of the land department of the Roxana Petroleum Corp. (now Shell Oil Corp.) at Tulsa. When that company moved to St. Louis Mr. Oliver resigned and accepted an executive position with the Marland Oil Co., later assuming charge of its foreign activities and chairmanship of its domestic operating committee, from which position he resigned in 1924 to renew the effort of promoting the program that has evolved into the one set forth in the article above referred to. Mr. Oliver's activities in behalf of this program over the past several years are well known. He was general chairman of the A.P.I. technical subcommittees in the celebrated A.P.I. gas study of 1927, and under the direction of Mr. Marland, chairman of the gas committee, organized that gas study. He was unsuccessful, however, in promoting active interest in the American Petroleum Institute in support of a stabilization program and thereupon transferred his activities in this regard to the American Institute of Mining and Metallurgical Engineers where he became chairman of the unit operation committee and was successful in promoting an extensive study of that subject in which several hundred engineers were engaged. He is now chairman of the petroleum division of the American Institute of Mining and Metallurgical Engineers. During the last presidential political campaign he was Oklahoma State chairman of the Hoover engineers committee, and for the past four years has been chairman of the board of directors of the Oklahoma Baptist University. The land and appraisal work, the practical oil field experience, and the legal training combined a type of experience peculiarly fitted to develop the problems involved in a stabilization program.

CALIFORNIA ALLOTMENT REVISED BY NEW EXECUTIVE COMMITTEE

LOS ANGELES, Calif., May 23.—Faced with a critical situation the newly organized executive committee in charge of California curtailment work issued an emergency temporary revision in field allotments over the past week end and directed a telegram to all producers urging immediate compliance.

Under this new schedule California is given a tentative daily allotment of 476,700 bbls. as compared with a previous allotment of 456,700 bbls. The new allotment, while higher than the original, is expected to reduce California's daily production substantially below the 500,000-bbl. mark at approximately which level state production has been hovering for the past several months.

While it will be several days before the new revision is reflected in state production field reports tonight indicated a substantial curtailment in several districts. The telegram dispatched to producers stated that:

"The executive committee for equitable curtailment of crude oil in California urges that as an emergency measure you curtail your production to meet this temporary curtailment program as set by the above committee and approved by the central proration committee made up of field chairmen. It is imp rative you make effective your allotment by 12 o'clock noon Monday. Certain inequities may exist which your chairman and umpire are authorized to adjust. April oil to storage, 30,000 bbls. per day, created a real crisis. It is essential all operators co-operate."

The telegram was signed by William Keck, chairman executive committee; Neal H. Anderson, oil umpire; V. R. G. Wilbur, chairman Long Beach producers committee; Robert Hickerson, chairman Huntington Beach producers committee; Lawrence Kelly, chairman Playa Del Rey producers committee; George Ring, chairman Santa Fe Springs producers committee; W. C. Whaley, chairman Dominguez producers committee and L. A. Cranson, chairman Santa Barbara County producers committee.

Mr. Keck, in emphasizing the importance of immediately stabilizing the industry in California called attention to the results of curtailment in the Mid-Continent sections where complete co-operation has brought about such an effective curtailment that excess production has been practically eliminated and conditions so improved that an increase of 25 cents per barrel for crude oil has been received and additional increases are expected. He further stated that there was no reason why California should not profit by this example of Texas and Oklahoma.

The executive committee for equitable curtailment is composed of three representatives of the Independent Petroleum Association, three of the Oil Producers Sales Agency and three from the central proration committee, the latter chosen by the field operators. As composed, the executive committee is a complete cross section of the independent oil interests of the State.

This group has asked that a representative be appointed from the Independent Oil Producers Agency of the San Joaquin Valley and will immediately elect three members not directly connected with the oil business but who will be representative of the people of the State.

Membership of the executive committee now includes: William Keck, chairman; Ralph B. Lloyd, vice chairman; W. H. Geis, secretary; R. A. Broomfield, R. R. Bush, John B. Elliott, P. H. Greer, H. Paul Grimm, V. R. G. Wilbur and Fred Owen.

The emergency curtailment measure prepared by the committee will serve as an immediate means of reducing production of crude and prevent further additions to storage. It provides for a minimum allotment to each well in the State. This minimum allotment is determined by using as a basis the productivity of the average producing wells in each of the various fields. The total production of any well is finally determined by first allowing the minimum production and then applying curtailment varying by fields from 25 to 76 per cent.

Such a plan allows for the continued operation of the small wells in the State and places the burden of curtailment on the large wells, which are most capable of being curtailed.

Chairmen of the 13 field committees who make up the central proration committee have accepted the proposal and have urged its immediate ratification upon their respective committee members.

CHOATE TO SHELL UNION

NEW YORK, May 23.—Arthur O. Choate of Clark, Dodge & Co. has been elected a member of the board of directors of Shell Union Oil Corp., increasing the number on the board to 22. The preferred stockholders now have one-third representation, as provided by the by-laws when dividends on the preferred are in default. J. C. Van Eck, president, reports that the charge-off from earnings this year for surrendered leases and abandoned wells is not expected to amount to more than $3,000,000, compared with $8,043,740 in 1931.

Destructive Competition Must Cease

Welfare of Equipment Branch of Petroleum Industry Depends on Manufacturers Sticking to Fair Prices

By Andrew M. Rowley

Gasoline price wars in the petroleum industry usually are confined to a small section of the country and are the exception, rather than the rule, in the general conduct of the business. And the reason for a producer at times selling crude oil under the posted price is, 99 times out of 100, that he has excess production he cannot dispose of and that he is badly in need of cash. In other words, he is distressed and his production is called by the industry "distress production" when it is dumped on the market.

But the intensive and destructive price war being waged by many manufacturers of oil field, refinery and pipe line equipment cannot be classed in either of these categories. It is nation-wide and the companies involved are not in a distressed condition. There is no question but what they eventually will be eligible for the latter designation if they continue present practices and methods, but at this time they have ample resources and are not forced to adopt the cut-throat policy prevalent now.

General business conditions, with a resultant dropping off in orders, undoubtedly was responsible for a few firms starting the practice of cutting bids below the minimum of good business. There always are a few executives who become panicky when business begins to slump a little and these probably believed they must cut prices and get orders regardless of whether the companies made any profit or not.

Better Stop the Snowball Now

But the little snowball they started has gathered others as it rolled along and the whole thing now has reached such proportions the welfare of the entire equipment manufacturing business is involved. That snowball must be stopped and the sun of improved conditions in other branches of the petroleum industry given a chance to destroy it. Otherwise, it threatens to cripple one of the basic industries of the country and to postpone for a long time the benefits that industry now should be beginning to enjoy from better conditions existing in the producing and refining branches of the oil business.

Conferences should be held at once by executives and sales managers of all firms making material, equipment and supplies for the petroleum industry and this matter of destructive competition considered. Such a conference can reach but one conclusion. The present policy of soliciting business at little or no profit and, in many cases, at an actual loss, must inevitably result in receivership for the company. We repeat the statement we made in the March 31 issue of The Oil and Gas Journal: "All business in the United States must eliminate the present practice of selling its products at or below the cost of manufacture."

Salesmen should be instructed to quote a price which will permit a profit and stick to that price regardless of what competitors offer. It will be far better for any company to be without orders than to accept business which cannot fail but result in a loss. It will at least be conserving what it has while its competitor, who accepts such orders, will be dissipating his resources and weakening the foundation of his own business.

As Good as Ever When This Has Passed

The official of one large equipment manufacturing company states his position as follows: "We are like the terrapin going down the road. Suddenly he is appreciative of certain impending danger. He immediately pulls in his head and legs and closes up completely, only so long as the impending danger lasts. Then he again proceeds on his way in a normal manner. The terrapin, when he proceeds the second time, is just as good a terrapin and can proceed in as definite and thorough a manner as before he pulled in his head and legs. So the policy of our company is that as long as some of our friends are bidding against each other destructively, we are not going to spend a great deal of money pursuing the proposition, and when they have lost to the extent that they must change the policy and proceed in the right direction, then we will be in as much evidence as before."

The present wave of destructive competition assumes several different forms. A bid, already cut to the bone, is submitted by one manufacturer. That bid is shown to a competitor who immediately gets out his pencil and starts cutting some more. Then the first bidder is told his competitor has submitted a lower price and he is asked if he will meet the lower price. He, too, gets out his pencil and starts to whittle. You can imagine the result.

When the order is procured, what good is it to the company getting it?

It is somewhat suprising how little criticism is directed at purchasers by manufacturers in the present situation. When the matter of showing bids to competitors is mentioned and questions asked about other practices which were not deemed entirely ethical in the good old days, equipment sales managers say they do not blame oil company executives for trying to buy as cheaply as possible and that the chief trouble is due to manufacturers themselves who make possible this bargaining and cutting of prices below costs.

Price Cutting Hurts Whole Industry

But the fact remains the oil industry as a whole has suffered greatly from price cutters in the gasoline and crude oil markets and is suffering to a very great extent now from gasoline bootleggers. Oil company executives should keep this in mind and not encourage a practice in another branch of the business which they condemn so greatly in their own particular sphere.

They must realize they cannot get the quality they desire and which their operations necessitate at the prices being quoted by some salesmen. And they should consider carefully the products sold them and the service given them by firms of long standing in the oil business before they reject the bids of those concerns and give their business to a price cutter. Equipment manufacturers may hold oil company officials blameless in the present situation but, personally, I feel these officials should practice what they preach and be very careful about encouraging any practice which they know would be detrimental in their own business.

A.P.I. Standards Overlooked

In addition, I am given to understand in many cases American Petroleum Institute standards have "gone to the wall" as one result of lowered prices for certain equipment. Those standards represent years of labor by some of the best minds in the oil field and equipment branches of the industry. Price cutters will have wrought great damage to the industry as a whole if these standards are passed up in making equipment to meet prices quoted by salesmen. In other words, bootlegging methods have no place in the oil business and oil company executives should be as careful and vigilant in stamping out such a tendency by some newcomers in the equipment field as they are in their efforts to eradicate the gasoline bootlegger.

Recognized substantial manufacturers of equipment and supplies for the petroleum industry are known and their products are known. These manufacturers must get back to sane, sound business. They must set a price for their product and stick to that price. They must sell quality and service and the oil company executive must see he cannot afford to let contracts on price alone. Quality and service, together with the ability of the manufacturer to carry out the terms of the contract, are most important factors.

Low Vapor Pressure Natural Gasoline Is The Logical Way Out

Annual Meeting of Association Prompts Frank Discussion of Markets

By W. T. Ziegenhain

"Talk effective volatility at the 50 per cent point" was R. C. Alden's advice to those attending the annual convention of the Natural Gasoline Association of America held in Tulsa in the past week. This suggestion was made in the open discussion which followed Mr. Alden's paper and was prompted by the statement on the part of several present to the effect that most refiners now have an excess of light fractions.

To answer this question, S. S. Smith of the Shell Petroleum Corp. pointed out that a refiner may have a sufficient volume of light fractions to supply a satisfactory 10 per cent and 20 per cent point on his distillation curve but could easily have a deficiency at the 50 per cent point.

The value of "balanced volatility" was given general recognition and it was apparent from the discussion that followed that natural gasoline manufacturers will attempt to expand this principle through their sales departments.

Mr. Alden of the Phillips Petroleum Co. showed that over the past five years the average 10 per cent point on the samples of motor fuel collected annually for inspection by the Bureau of Mines has shown a consistent decline until now it is down to about its minimum point. Except for radical changes which might be effective in motor car design in the interest of improving fuel distribution, it is not likely that natural gasoline sales may be expanded to reduce the 10 per cent point further. In a similar manner the 20 per cent point has been reduced to what is considered a reasonably low temperature to guarantee quick starting, etc.

Stress Octane Value

When speaking of the 50 per cent point, however, there is the factor of improving the motor fuel from a different angle, that of octane value, and it is this factor which natural gasoline manufacturers chose to stress along with volatility.

Dr. E. R. Lederer of the Texas Pacific Coal & Oil Co. elaborated on this idea by saying that the refiners are burdened with paying royalties in one form or another and that they welcome a chance to improve the antiknock value of their motor fuel without incurring the payment of a royalty for cracking or for the use of adding tetraethyl lead. He suggested that every effort be made by natural gasoline manufacturers to broaden the knowledge gained through research thus far indicating that natural gasoline had greater lead responsiveness and maintained its antiknock value better at the higher temperatures than cracked gasolines.

Sales Managers Blamed

The sales managers of the natural gasoline industry were called upon to take their usual share of criticism when it was pointed out that refiners were utilising 26 to 30-pound light natural gasoline made at their own plants while the sales managers say they must have at least an 18-pound natural in order to sell the refiner.

Another comment was to the effect that some sales managers were not inquiring into the actual needs of the refiner and were overemphasizing the "direct to jobber" sales.

As an association, the manufacturers have consistently held that there should be but one office through which the sale of motor fuel be handled. By that is meant that the association has favored selling its natural gasoline to the refiners as a blending material and letting the refiners be the sole source of motor fuels. The association has not advocated that natural gasoline manufacturers go to the expense of establishing an elaborate sales system to duplicate that of the refiners in order to compete with the refiners for the jobber business.

However, it is realized that if the refiners do not take the natural gasoline it will be necessary to establish some sort of marketing program. These manufacturers contend that the material will continue to be made and can be made more cheaply than refinery gasoline. Because of the public acceptance of those properties, volatility and high octane value, which are inherent to natural gasoline, these manufacturers say there is nothing to hinder them from approaching the trade as a direct competitor of the refiners if there is no other way out. Much of this material is already in direct competition. An estimate has been made placing the volume of natural gasoline going direct to jobbers for blending at 1,500 cars a month. This business has developed very rapidly and without a great deal of sponsorship.

S. S. Smith defended the program of shipping direct to the market instead of transporting the gasoline to the refinery from an economy standpoint. He said the refiners would find it to their advantage to buy well stabilized natural gasoline and ship it direct to blending plants in the consuming areas instead of blending with the refinery gasoline at the refinery because at least one freight haul is eliminated. It was pointed out that very little additional equipment is needed at the bulk plant and sufficient trials have been made to assure its practicability. Success of the Phillips Petroleum Co. in the operation of gasoline pipe line and blending plant in East St. Louis is taken as evidence of the practicability of the program.

Investigations made by Shell Petroleum Corp. and Skelly Oil Co. have prompted the statement that each of these companies will equip more than 100 of its bulk plants with tankage and circulating pumps to facilitate blending natural gasoline and refinery gasoline on the grounds instead of at the refinery as has been the practice in the past.

Natural Quotations

When the question of jobber-blending lapsed into a discussion of a fair price to expect for the low vapor pressure material, D. E. Buchanan of Hanlon-Buchanan, Inc., said, "There is too much cost discussion in the sale of these low vapor pressure naturals." Mr. Buchanan favored pricing these grades on the basis of relative supply and demand.

It has been the general plan of the association in the past to favor allowing the price on the 26-70 grade to act as the basis for pricing all other grades. Others stated that while this system might be theoretically correct it was operating to the disadvantage of natural gasoline manufacturers making the 10 to 14-pound natural gasoline as they should base their market prices on that of refinery gasoline which at this time is about three times that of 26-70 natural. Dr. E. R. Leder favored asking all trade papers to expand the number of grades of natural gasoline on which quotations are published. He also favored adopting a name for the 10-pound natural gasoline different from simply "natural gasoline" so that it might enjoy a price level near that of refinery gasolines.

In a report by S. B. Crooks of the Empire Oil & Refining Co. covering the work of the sales managers committee for the year, he had explained the situation in this respect as follows:

"In spite of marked declines in natural gasoline production amounting to 21 per cent in the industry in the United States and 23 per cent in the Mid-Continent area over the past year, and practically 40 per cent for the industry over the past two years, the demand has decreased even faster as evidenced by the fact that in addition to our prices being at record low levels, they also represent a smaller percentage of the U. S. Motor price than ever before. The refiner is blaming the natural gasoline manufacturer for the low natural gasoline prices and the possible effect on the motor fuel market, but these prices are resulting from the refiner's failure to buy our products. The reason for these low prices has been the almost complete entry of the refiners into the natural gasoline business by vapor recovery plants but without stabilising the products of these plants as the natural gasoline manufacturer has done, their vapor pressures range up to 30 pounds or more. As previously stated, the stress placed upon octane ratings of motor fuels further increased the production of refinery recovery plant gasoline. The refiner does not want to buy even the present reduced natural gasoline production. therefore, this product invades what he calls his marketing territory and often at prices under his own quotations. This brings us to the fundamentals of the situation stated without regard to any one branch of the industry. The motor fuel market is the market for all gasolines whether natural or refinery. Natural gasoline production can be controlled only by reduction of crude oil production and reduction of vapor pressure of the natural gasoline output. The refiner has full control of his production by reduction of crude runs, which should be passed back to the crude oil producer in the form of lessened market for his product.

Pipe Line Deliveries

A subject which brought a considerable amount of discussion was that of transporting natural gasoline by pipe line. Those present were interested in the comments of George Oberfell of the Phillips Petroleum Co. on the operations of that company's line from the Panhandle of Texas to East St. Louis, Ill.

Mr. Oberfell stated that it has been the practice of his company to transport various grades of refinery gasoline, natural gasoline and butane through the line and that with a reasonable amount of planning only a few hundred barrels of the material delivered shows evidence of contamination with the products transported next to it. He stated it was necessary to maintain a relatively high speed of travel and that products of as near like properties were transported in rotation but aside from these operating requirements there was nothing acting to show up the pipe lines to a disadvantage.

As operating practices are perfected, Mr. Oberfell said additional products will be transported and said it was quite likely that an attempt to transport propane will be made in the near future.

Another phase of pipe line transportation was that of blending natural in the field with the crude for transportation with the crude to the refinery. R. E. Baker of the Shell Petroleum Corp. cited the experience of his company in transporting natural gasoline from the Mid-Continent through the crude lines. He said their experience indicated that approximately 5 per cent of the total delivery could be natural gasoline without decreasing the volume of crude delivered. This was due to the lower viscosity of the blended crude. Because there was no special provision for recovering large percentages of natural gasoline at the refinery, the 5 per cent limitation had been found expedient in the case of the Shell set-up now but that properly designed exchanger equipment could be added at the refinery which would recover the natural and allow the regular distillation equipment function in the regular manner and thus the percentage of natural blended with the crude could be increased many times.

Operators Meeting

At the operators meeting on Thursday morning, the co-operative spirit the operators had shown during the past year of "hard times" was cited often. Executives stated that when the need came to cut expenditures for equipment the men had effected economies beyond those thought possible. It was the general belief that if the men at the plant be given tools and encouragement many special pieces of small equipment could be developed which would pay well in monetary returns.

GASOLINE ASSOCIATION RE-ELECTS ALL OFFICERS FOR ANOTHER YEAR

All officers of the Natural Gasoline Association of America were re-elected for one year at its annual meeting held in Tulsa in the past week. S. S. Smith, of the Shell Petroleum Corp., was again elected president, with G. M. Campbell, of the United Gas Public Service Co.; O. C. Field, of the O. C. Field Gasoline Corp., and Emby Kaye, of the Skelly Oil Co., as vice presidents.

Ray Miller, secretary and treasurer of the association, is not elected at this time. The list of directors elected for a two-year term include representatives of

Amerada Petroleum Corp.
Columbian Gasoline Corp.
Hanlon-Buchanan, Inc.
The Henderson Co.
Phillips Petroleum Co.
Sinclair Prairie Oil Co.
Signal Oil & Gas Co.
Skelly Oil Co.
Standard Oil Co. of California.
The Texas Company.
United Gas Public Service Co.
Warren Petroleum Co.
L. H. Wentz—Oil Division.

Directors held over from last year who will continue in office for another year include representatives of

Carbide & Carbon Chemicals Co.
Carter Oil Co.
Continental Oil Co.
Crosbie & Moran, Inc.
Deep Rock Oil Corp.
Empire Oil & Refining Co.
O. C. Field Gasoline Corp.
General Petroleum Corp.
Indian Territory Illuminating Oil Co.
Lone Star Gasoline Co.
Roeser & Pendleton, Inc.
Shell Petroleum Corp.
Texas Pacific Coal & Oil Co.

Oil Conference Nearing an Agreement

American, British and Dutch Groups in Agreement, and Awaiting Definite Commitment to Plan by Soviet Representatives

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, May 24.—Group sessions by the various interests meeting here in the international oil conference occupied the greater part of the past week, and it is now indicated that the meetings will require a longer period than had been expected. Pending the conclusion of the negotiations, Charles E. Arnott, president of the Socony-Vacuum Oil Corp. and of the Vacuum Oil Co., Inc., at whose invitation the foreign oil men came to New York, and James A. Moffett, Jr., vice president of the Standard Oil Co. (New Jersey), who is acting as joint spokesman for the conference, with Mr. Arnott, have continued to withhold definite news of the progress of the negotiations and the actual aims of the conferees.

It is generally believed in oil trade circles, however, that negotiations are being concentrated on an effort to arrange

C. E. Arnott
President, Socony-Vacuum Oil Corp. and Vacuum Oil Co., Inc.

the orderly marketing of Soviet refined products in world markets, through agreements on the part of major world companies to absorb stated quantities of Russian oil for distribution through their own marketing organizations, and that the only hitch thus far is the inability of the Soviet representatives and the other interests concerned in reaching an amicable accord on the quantities to be thus disposed of and the terms. The proposal of the American and European companies, it is understood, contemplates the limiting of Russian exports over a 10-year period to approximately 37,500,000 bbls. annually, which was roughly the amount of 1931 exports of refined products by Russia, with the Soviet oil men holding out for periodical increases in their export quota as their domestic producing and refining operations grow.

Question of Rumania

The question of Rumania has been consistently ignored in statements for publication thus far by all but the Soviet representatives, who have stressed the fact that Rumanian competition in European markets during the past few years has proved even more demoralizing than that by the Soviet. The major American and European interests represented at the conference, however, are believed to control the Rumanian situation sufficiently to guarantee Rumanian co-operation in any stabilizing move which may be undertaken with control of Russian shipments as a basis.

The policy of reticence on the part of the American leaders in the conference thus far has been reflected more by denials of rumors of what had happened at the meetings, than by statements of what actually was being done.

For example, it was reported in oil and financial circles late in the week that the oil negotiations were centering around a discussion of a loan to the Soviet by foreign oil interests as part of a deal whereby Soviet exports of oil would be controlled. Mr. Arnott entered a strong denial of this report.

Mr. Arnott's Statement

Speaking to newspaper men at a press conference, Mr. Arnott frankly stated that "It would be premature to be frank with you," and refused to answer pointed questions concerning the details of the matters already discussed. He made it clear, however, that consideration of the Russian angle has thus far occupied the major part of the conference's attention. The American group, he said, "had reached a point at which several ideas had been definitely crystallized. It is now a question of whether the Russians, who have also crystallized their own views, and ourselves can harmonize our positions and make for a basis of mutual benefits."

The American and the British and Dutch groups, it is understood, have reached an accord on a mutually agreeable basis for stabilization of export markets, but their views have not yet been accepted by the Soviet representatives. As indicative that the conferences have not yet reached the point where compromises are in order, Mr. Arnott stated that "nobody is holding out for anything."

Kessler Plan Not Considered

Both Mr. Moffett and Mr. Arnott have emphasized that the Kessler plan for stabilization of production and oil prices is not being considered at the present meeting, although it is the general impression in oil circles that successful culmination of the Soviet negotiations here will be followed in the near future by a world conference abroad, probably at London or Paris where, with the stabilization of marketing operations accomplished through an accord with the Soviet, the question of rationalization of world production may be discussed.

General sessions attended by all interests participating in the world conference are expected to be held this week, and it is believed that a final agreement, in principle at least, will be reached. The Soviet representatives, it is understood, have been authorized by their government to negotiate a solution to the oil problem, but it is considered likely they will accept an agreement "in principle" only, with formal ratification of any agreed-upon plan to be dependent upon later action, after they have had opportunity to return to Russia and present the plan in detail to their associates there, and to the Soviet government.

James A. Moffett
Vice President, Standard Oil Co. (N. J.)

Basis of Payment

The question of establishment of a basis for payment for Soviet oil to be taken by American and European companies on the proposed 10-year contract arrangement, it is reported, has thus far, along with the exportable quantities to be allotted the Soviet, formed one of the chief factors for discussion at the conference. Soviet Russia, obviously, would be unwilling to accept the f.o.b. Constantza price as a representative "free market," and it is believed that the U. S. Gulf will finally be decided upon as the representative "free market" on which a world quotation can be based. Even the Gulf price situation, however, threatens to involve new complications if, and when, a tariff on crude petroleum and gasoline is imposed by the United States.

Thus, while the conferees are hopeful that the conferences can be brought to a close by the end of the current week, it is obvious that only by an unlooked for stroke of good fortune can all of the problems involving the Russian angle of the world marketing situation be adjusted. For this reason it is considered likely that the conference will adjourn late this week, or early in the coming week, with an agreement "in principle" reached, and formal ratification of whatever scheme may be tentatively adopted deferred until a later meeting, to be held either at New York or in Europe.

Constructive Work

While American oil men in attendance at the meeting have been pledged to secrecy regarding the progress of the negotiations, with Messrs. Arnott and Moffett acting as the official spokesmen for the meeting, it is learned that the arrival of the American and European oil companies at an accord with respect to the proposals to be submitted to the Soviet was in itself no mean feat of diplomacy. Some of these interests in recent years have been at odds with their competitors regarding certain aspects of foreign marketing operations, and even should the Russian negotiations fall through, which is still possible, although extremely unlikely, it is felt that the conference will have accomplished considerable constructive work through the bringing together of major European and American oil companies for an informal round table discussion of mutual problems and an ironing out of difficulties and misunderstandings hitherto existent.

Representatives of the major American companies participating in the world conference here find themselves in an anomalous position. Representation at the conferences has necessarily been confined to the major exporting companies which will be called upon to furnish most of the participation in any scheme which may be evolved for the absorption of Russian exports. At the same time, however, they are carrying the banner of the entire American petroleum industry, which has a vital interest in the outcome of the proceedings. Being unable to divulge the trend of the proceedings, because of the obvious danger of "upsetting the apple cart" in the midst of negotiations through a misconstruction of the proceedings or an ill-timed criticism of the negotiations, they are subject to criticism by many elements in the industry for this very policy of secrecy which they deem so essential.

B. O. D. PLANS EARLY PIPE LINE SURVEY FROM MOSUL TO THE SEA

British Oil Development Co., Ltd., will start early and intensive development work in Iraq, where it recently received important concessions, and will shortly undertake a survey for the route for a pipe line, probably running from Mosul to the deep water port of Alexandretta on the Mediterranean, according to reports from London.

Commenting on plans of British Oil Development Co., the Petroleum Times of London says: "The survey of the Mosul line is still to be made, and, presumably, this work will be commenced at the close of the hot season, but, obviously, the route selected will not deviate greatly from the natural course of the railway from Alexandretta to Mosul, where, at Tuayirah, 7 miles south and west of Mosul itself, the proven wells of the company are situated.

"With a pipe line terminal close to Alexandretta, where there is magnificent deep water harborage, the port of shipment for Mosul oil will be nearer to Greece, Italy, France, Spain, South Germany, Switzerland and to northern Africa than the ports of any other producers save the Iraq Petroleum Co., the cost of transport being correspondingly lower than those from the Indies, Persia, Rumania, Russia and America, a most important factor in these days when conditions demand the utmost reduction in costs.

"The length of the line required from Mosul to the coast will be under 500 miles, while the bifurcated lines of the other Iraq company will be more than 700 miles longer. The capital outlay of the B.O.D. company, with consequent capital, maintenance and depreciation charges, must be proportionately lower, but comparisons based merely on relative lengths of lines are erroneous. There are the comparative costs of construction to be considered, as also the rate of provisions for depreciation. The lines of the I.P.C. are to be taken through a country of rugged character with, for the most part, a loose and changing sandy soil. This will necessitate the burying of the pipes, and the very experienced companies associated with the I.P.C. estimate accordingly that the life of pipe so buried will be not more than 10 years, or, in other words, depreciation on one 12-inch pipe will be nearly £150,000 a year. Before the pipe can be buried, however, it is necessary that the sand should be excavated, while the absence of proper roads in the areas to be traversed will entail very heavy charges for transport, the wells of the I.P.C. being 800 miles from the coast.

"On the other hand, the B.O.D. has

(Continued on Page 40)

W. S. Farish Tells Outstanding Need

In California Address He Says Control of Output Must Come. Unified Operation Should Displace Unrestricted Competition

By W. S. Farish
President, Humble Oil & Refining Co.*

It is my deliberate judgment that the oil industry currently is in sounder economic position than any other large industry in America. Moreover, in its most important aspects oil is in sounder position today, in the face of the current depression, than it has ever been previously since it became an industry of first magnitude. Consider for a moment the fact that oil has come through the depression so far with practically 100 per cent of the demand for its principal products which it enjoyed immediately before the depression struck us, whereas other large industries generally have lost from 40 to 60 per cent of their predepression demand. Consider further, that over the last two years, in the face of the greatest potential oversupply of its raw material, crude oil, which it has ever been obliged to contend with, the oil industry has succeeded in controlling production to the point that it has actually reduced its burdensome above-ground stocks. Compare this achievement with its record for the preceding 10 years during which, with a relatively much smaller potential supply, the industry, despite its best efforts to avoid it, built up a staggering load of excess crude and products in storage.

If our products are so essential to modern life that the demand for them continues undiminished through the stringent period of this greatest of all depression, and if the collective intelligence of our industry has risen to a level which has enabled us so far to control a potential flood of new crude supply of overwhelming proportions, are we not justified in facing the future confidently and with equanimity?

Outstanding Need

The outstanding present need of the oil industry in the United States is to be able to balance supply with demand; to control its output of crude oil so that excessive volumes of its raw material will not be taken wastefully from the ground and forced onto an already glutted market. It may be contended that this is only one aspect of a broader need; namely, to be enabled, as an industry, to plan its whole operation; that is, to be enabled to deal collectively in an intelligent manner with its problems, just as any well-managed single unit in the industry does. But the paramount need of a collectively intelligent oil industry today would still be to get control of its output of crude, so that the first statement of our need is, in fact, true.

If the oil industry had control of its production, and was able effectively to limit its output currently by pools and by producing regions to reasonable market demand in each case, it could go far toward solving many of its most difficult problems.

Industry Powerless

Except in pools or fields where the rate and volume of output is controlled, the industry is powerless to set up underground reserves. But, under existing conditions, control of output is impossible as a practical matter in pools where the ownership of the operating leaseholds is divided, and the ownership of the great majority of our important pools is divided among many operating units. Competing producers are forbidden by our present archaic antitrust laws to come to any agreement to control their production. Moreover, even if our laws were modified to permit agreements, producers would still be helpless to control production under our laws of property rights as applied to oil and gas, in case any one of their number refused to agree to the proposed control.

There has grown up in law the dictum that whoever drills a well on his property is entitled to recover from it all the oil and gas that can be obtained from it, even though its output comes wholly from beneath the adjacent lands of his neighbor. Since oil and gas in natural reservoirs are subjected to high pressure they move toward any point where pressure is relieved, such as the foot of any oil well that penetrates the reservoir. Under these conditions it is possible for a well on A's land to drain oil from under B's land. Legally, aside from the exercise of the police power, B can only protect himself from loss of this character by drilling an "offset" well for himself. This is not an adequate remedy. Drilling an offset well does not protect B under all circumstances against the loss of part of the mineral wealth which originally underlay his land, and which under the basic laws governing property rights he owns and is entitled to enjoy.

Puts Premium on Greed

However, laudable their intent, our laws and customs in this connection result in what is virtually "legalized piracy"—the grant of a legal right under such dictum to take and thereafter own and enjoy that which under fundamental principles of law is the property of another. This puts a premium on greed, and tends to launch every oil producer on a piratical expedition to capture and possess his neighbor's oil.

As a result of this legal dictum it becomes impossible for one operator to keep his oil in the ground if his neighbor chooses to produce from adjacent wells, or even for 100 operators in a pool to keep their oil in the ground if a single operator in the same pool chooses to produce his oil. If anyone fails to produce, and to produce at the same rate as another operator in the same pool does, then the first producer loses part of his oil and gas. Moreover, since oil and gas are brought to the surface in large measure through the agency of the reservoir pressure which is common to all parts of the reservoir and which may be rapidly dissipated through the release of pressure at any point, the producer who fails to take out his oil at the same time and at the same rate as his neighbor soon finds the reservoir pressure, part of which he was entitled to use in producing his oil, entirely gone. The gas which normally is dissolved in the oil in the reservoir has escaped leaving the remaining gas-free oil dead and viscous in the pores of the reservoir, to be recovered, if at all, not by natural flow, but by pumping or other artificial and relatively expensive means.

The whole effect of this legal conception of the rights of oil and gas producers is to drive every producer to drill and develop his property, and produce his oil as rapidly as he possibly can, regardless of the market demand or any other consideration. If necessary he had better run his oil to storage on top of the ground, even though he realizes that it will evaporate and otherwise be wasted in part, or may even be lost entirely through fire, than to leave it in the ground for his neighbors to appropriate under the protection of the law.

Cannot Build Reserves

Obviously, under these circumstances no "reserves in the ground" can be built up. Any oil that is discovered must immediately be produced by the surface holder before a competitor produces and takes it. As fast as we can, we must produce every barrel of oil we find and throw it upon the market whatever the demand for oil may be. No reserves that could possibly be produced were ever left in the ground by the American producing industry, until recently through one program or another some measure of control over production in certain pools was put into effect. Furthermore, adequate reserves in the ground never will be built up until effective control of production and effective limitation to market demand are established and maintained. Yet social and economic welfare, alike, even our national security, demand that such reserves shall be set up.

Control of production, with ratable withdrawals from the various properties in an oil pool and limitation of the total output to the reasonable market demand, would eliminate unnecessary storage above ground and the wastes of oil that inevitably attend such storage. More important, it would minimize the underground waste that results from uncontrolled production practice. To produce without control from such wells as may have first been completed, or happen to enjoy large market outlet, not only injures other property owners who have no wells or whose wells are not produced; but it wastes gas and reservoir pressure; promotes uneven encroachment of the water which normally underlies and surrounds oil in its natural reservoirs underground; and stimulates the flow of gas and water, both of which move through the pore spaces of the reservoir with greater facility than the less mobile oil, so that they tend to by-pass oil and seal it off away from the foot of the well where it may remain, unrecoverable.

Properly controlled production practice in each pool, on the other hand, makes possible the greatly increased recovery and the materially decreased production costs that result from ratable withdrawals from different parts of the reservoir and efficient use of reservoir pressures, both gas expansion and water encroachment. Intelligent control of production in a pool may easily mean the recovery of twice as much oil as uncontrolled production methods would yield, with only one-third as much expense for drilling wells and less than one-half the cost per barrel for lifting the oil. In other words, yield can be doubled and unit costs divided by four through intelligent control of production.

Price Fluctuations

In the absence of control, volume of production fluctuates, with short periods of flush flow in great volume during which prices fall to ridiculously low levels followed by longer periods of failing supply, and frantic search for new fields, with prices mounting to absurd heights. Mid-Continent crude has sold as high as $3.50 per barrel and as low as 15 cents per barrel since the close of the war. The producing industry expands and contracts in sympathy with the price level. The advent of high prices stimulates great activity, bringing additional capital and workers into the producing industry. Recurring low prices destroy the value of this new investment as well as old investment in production, throwing thousands of workers out of employment and bringing distress and confusion into industry.

Low cost production, with correspondingly low prices of products and a stabilized producing enterprise, such as results from intelligent control of production, is essential to the welfare of American industry and of the American people. Other nations, and oil producers in other nations, already enjoy the advantages that grow out of this control, since foreign oil fields are generally held in large ownerships which make possible their operation as units under single management, and since producers in foreign countries generally are free to enter into agreements to control production.

If production from different pools and from different producing regions were controlled and limited to reasonable demand of the natural markets of that pool or region, the ruinous temporary floods of oil from flush, uncontrolled fields could be eliminated. The cost of excess capacity in transportation and other facilities to take care of such brief peak outputs could be saved. And the urge which comes upon one pool or producing region by reason of an intolerable burden of flush production, to dump its surplus upon the natural markets of another region where supply and demand may be more nearly in balance, would be avoided. It would be bad industrial economy for Persia, or Russia, or Rumania, to force its output into the distant and already adequately supplied markets of the United States or South America.

At times in the past oil or products have moved from Wyoming half way across the continent right into the producing and manufacturing regions of Texas and Louisiana. Oil and products in large volume have moved from the Pacific Coast, a region without adequate coal resources, and, therefore, peculiarly dependent on petroleum, through the canal right past the producing region of Columbia, Venezuela, and the Gulf Coast of Texas and Louisiana, to the Atlantic Seaboard. It would be equally justifiable for Texas to ship part of its surplus oil back through the canal to our west coast ports, or for the Dutch East Indies which have available, if they choose to produce it, much more oil than their natural market can absorb, to ship their excess eastward across the Pacific to California to compete for the local markets of that State. Movements of this character are economically indefensible. It can only be excused or explained as the result of intolerable pressure to move to market, stocks which were built up through lack of control of production.

Each pool and each producing region should refrain or be restrained from forcing or dumping its excess crude or products into the natural markets of another producing region. It is an economic crime to move an essential commodity like oil half way around the earth in order to dump it into an already surfeited market, at a price lower than the actual cost of production, neglecting costs of transportation from source to market. Particularly is this true when the region in which the shipments originate is itself dependent on oil and gas for its industrial and social welfare.

Too Great Spread

But the greatest burden which the petroleum industry has brought upon itself through its inability to control its production of crude oil is, undoubtedly, the economic waste that has arisen through the overexpansion of manufacturing and distributing facilities. Small inefficient refineries; overbuilt large refineries; duplication of sales equipment; thousands of unnecessary retail outlets; filling stations that could not hope to sell enough gasoline to justify their existence even if they netted a profit per gallon as great as their total selling price, including tax; and other filling stations so elaborate and so expensive that no possible volume of sales could yield a profit on the investment—these are the most conspicuous evidences of this overexpansion and economic waste. Undoubtedly manufacturers under the urge to build up sales have in the past made possible too high a margin of profit for the retailer, by maintaining too great a spread between wholesale and retail prices. As a result, too many retailers have been set up in business. Competition for gasoline outlet—for gallonage

*Before U. S. Chamber of Commerce, San Francisco, Calif.

The appetite of the automobile engine has changed but that doesn't worry Dubbs refiners

Today's engine wants anti-knock gasoline

The Dubbs cracking process makes anti-knock gasoline from crude oil or any fraction, and at low cost

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Can you sell straight-run at a premium?

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Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
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—has run wild. The costs of marketing have pyramided and multiplied until they have become fantastic.

In the final analysis there can be no escape from the conclusion that these evils grew out of the industry's lack of control of production. Failure to conserve and to prevent the waste of this essential, irreplaceable commodity, failure to control the production of crude oil, the known reserves of which are limited and modest in proportion to our current needs, is an economic and social crime.

Control in Each Pool

The industry and public alike must be fully educated to a conception of crude oil producing practice, which recognizes the vital interest of both government and public, as well as the producing industry, in our petroleum resources.

Efficient producing operations with unified control in each pool must be substituted in this country for the present method of unrestricted competition between individual leaseowners in the pool. The 'legalized piracy' that results from the offset-well-theory protection against drainage must be abolished. The pool itself instead of the individual lease must become the unit of operation and of competition. Reservoir pressure must be efficiently utilized. Gas must be conserved and made to share in the efficient lifting of the oil. Water encroachment must be so controlled that the flood will advance evenly and contribute to the ultimate recovery of oil and gas. Each owner in the pool must be made secure in the enjoyment of his lawful property; namely, the right to produce that volume of oil and gas which originally underlay his premises. Producing practice will naturally trend under the stimulus of this enlightened point of view toward co-operative and unitized exploration and development of oil pools.

Laws Needed

While continuing to safeguard scrupulously and adequately the public interest lawmaking bodies should set about to revise antitrust laws, both state and federal, removing so far as may be required prohibitions against agreement between producers for co-operative and unitized exploration and development of individual oil pools and against agreement to curtail production to reasonable market demand during periods when available supply exceeds reasonable market demand. The right to make curtailment agreements should permit of proper allocation of outlet as between individual pools, producing regions and states alike.

Adequate laws must be enacted by oil-producing states investing the constituted conservation authorities in each of those states with power to bring about through reasonable orders the curtailment of production to the volume required to meet the reasonable market demand and to secure the ratable application of the necessary curtailment to the several fields involved and to the several producing properties in each of the fields involved. There should be effective provision in these laws to prevent physical waste either in exploring for oil or gas, or in producing oil or gas. The laws should be so drawn as to make the orders of the conservation officers enforceable during periods when their validity may be under test in the courts.

This whole arrangement contemplates an interestate co-operative action either through a joint committee or through interstate compacts, by virtue of which the conservation authorities of each state may inform themselves as to the volume of oil required to meet the reasonable market demand from time to time, and thereby be enabled intelligently to fix the appropriate participation of their respective states in the available market outlet.

It contemplates also a limitation of foreign production and of imports from abroad proportionate to the domestic restriction.

Protection to Owner

To make more effective the enforcement of curtailment orders, statutory provision should be enacted in the several oil-producing states entitling one landowner to protect himself by injunction and in damages against drainage or damage to his property by the operations of another producer in violation of the orders of the conservation authorities. This will substitute order and the respect for the other fellow's right for the piracy heretofore prevailing.

In approaching the problem of controlling the production of crude oil to market demand in order that waste may be prevented and a valuable natural resource conserved, it is fundamental to recognize that all owners in a given pool are bound together by the character and habits of oil and gas in their natural reservoirs underground. Producers are entitled to enjoy in common the benefits that arise from the reservoir pressure, the expansion of the gas and the orderly encroachment of edge or bottom water, and they can only enjoy these benefits fully if the production from the pool is intelligently controlled. The correlative rights of the various owners must be equitably adjusted and their general welfare protected through the prevention of waste.

Avoid Interference

I realize that in proposing a remedy for the ills of the oil industry which involves the exercise of the police power of the state governments and the co-operation of federal authorities, I shall be charged with turning our business over to the government to be run by it. It will be objected that the remedy proposed invites and promotes government interferences in private business. In reply, I would point out that a part of the proposed solution, namely, the relief from the restraint of state and federal anti-trust laws, is in fact a step in a direction away from government interference. Furthermore, I am convinced that the course I recommend will avoid—not involve—greater interference in business. It does not lead to a maximum of government surveillance, but only to that degree of government co-operation which will enable and permit physical and economic laws to function without restraint. If some such steps are not taken for the industry in the near future, government will be driven by public interest to measures of control of the industry that must prove to be even more radical and drastic.

Only One Remedy Declares C.B. Ames

Not Price Fixing but Control of Supply, Vice President of The Texas Company Tells U. S. Chamber of Commerce at San Francisco

By C. B. Ames
Vice President, The Texas Company*

The trouble is not that there is too much oil. This country needs every barrel of oil which it contains. In the course of time, there will be an ample demand for all of it, and in the course of time, the people will be clamoring for these irreplaceable products at much more than the present price. There is, however, at the moment a productive capacity largely in excess of the immdiate demand. Four states today can produce four times as much as the country can consume, but neither these four states nor the whole of the United States can repeal the inexorable law of demand and supply. As long as there is overproduction there will be depression in the industry, and the producing states will suffer the consequences.

What is the remedy?

The remedy is not price fixing. Experiments in this country and abroad, public and private, have demonstrated that a price for a commodity cannot be pegged against an oversupply. Any price fixing effort which ignores supply is bound to fail. There is one remedy, and only one, and that is to control supply.

Difficulties in Control

Can supply be controlled?

It cannot be controlled by agreement within the industry. The antitrust laws, state and Federal, whether rightly or wrongly, are construed by some as prohibiting such an agreement. Even if there were no antitrust laws there are so many producers in the United States having divers and selfish interests that an agreement extending over many states is impossible. One dissenting producer in any given oil pool can prevent intelligent co-operation of all others. An oil pool is a unit. Its boundaries prescribed by nature have no relation to the artificial boundaries of the surface ownership. If, therefore, one surface owner declines to agree but insists on drilling into his own land and producing from his own wells, other surface owners are required to do likewise or suffer the drainage of their oil. Past experience demonstrates that it is impracticable to adequately control production by agreement within the industry even in those states where there are no legal impediments.

If production is to be controlled, therefore, it must be controlled by the states. The Supreme Court has upheld various state statutes involving this subject.

No state acting alone can adequately control production because no state has a monopoly of the oil. No matter how effectively production may be controlled in Oklahoma or Texas or California or Kansas, unless similar control is exercised in the other states, the whole effort at control fails to accomplish its purpose. Adequate control, therefore, depends upon and requires co-operation of the principal oil-producing states. The Constitution of the United States provides that:

"No state shall, without the consent of Congress, * * * enter into any agreement or compact with another state * * *."

In order, therefore, to secure effective agreement between the states, the consent of Congress is necessary. These simple facts are now well recognized. The Federal Oil Conservation Board for years has been recommending an interstate compact to prevent waste. There is now an Oil States Advisory Committee consisting of representatives from the 10 principal oil-producing states, and this committee is urging the creation of an interstate compact and is co-operating with the Federal Oil Conservation Board in seeking the consent of Congress to such a compact. A great many of the enlightened units in the oil industry are anxious to see the compact created and co-ordination of control by agreement between the principal oil-producing states made effective.

Calculating Demand

Assuming that control is necessary and that this control must be exercised by the oil-producing states in co-operation with each other, then a very practical question arises as to how much oil should be produced in order to conserve the supply and prevent waste. Conservation of supply and prevention of waste are the fundamental objectives. Every effort should be directed towards securing these two objectives. Enough oil should be produced, and only enough to supply the reasonable demands for consumption. Less than this would unduly enhance prices. More than this inevitably results in waste. Can the future demand over a reasonable period of time be approximately ascertained? The answer is that it can.

For about two years the Federal Oil Conservation Board through a committee of experts has been forecasting demand over periods of from six to nine months. Similar work has been done by the economics committees of the American Petroleum Institute. The work of these committees has had the test of time and experience and it has been demonstrated that reasonably accurate forecasts can be made. If we had an interstate compact authorizing the oil-producing states to co-operate with each other for the conservation of their oil and gas reserves, this central agency would naturally be charged with the duty of forecasting demand and would, in co-operation with the Federal Oil Conservation Board, represent both the interests of the oil-producing states and the interests of the consuming public. Having ascertained the probable future demand for refined products over a period of from 6 to 12 months, it would then be the duty of these agencies set up by the compact to ascertain the amount of crude oil which should be produced during that period to supply the demand. This amount having been ascertained, the states, through this central agency in which they would all be represented, would allocate to each state the proper amount which it should produce. Each state acting for itself alone would, of course, in its own way and without any outside control, apportion its quota between the various producing pools within that state. Such a plan would help insure the producing states against the waste of this natural resource and at the same time, insure the consumer against premature exhaustion of the supply.

In order for this plan to accomplish the desired results, it is, of course, necessary that the importation of crude oil and refined products should harmonize with the program applicable to domestic production. This important feature is embodied in the measures which have been introduced in Congress under the auspices of the Federal Oil Conservation Board and the Oil States Advisory Committee.

Government Interference

The problem of the petroleum industry is the problem of oversupply. We have excessive producing capacity, excessive refining capacity and excessive marketing facilities. In this respect we do not differ essentially from other industries. There is an excess of producing capacity in the coal industry, in the timber industry, in the copper industry. There is excess plant capacity in the steel industry, in the automobile industry, in the textile industry and in many others. The problem in all these industries is to deal with this excessive supply. In the petroleum industry much progress has been made, although much yet remains to be done. However, it is highly gratifying to know that the problem is understood by the oil-producing states and by the Federal Government, and that a sound program is being steadily pursued with increasingly gratifying prospects of complete success.

Does this mean governmental interference with business? Possibly so, but no one can deny that it is the duty of government to prevent waste and to protect the natural resources from premature exhaustion. Only by doing so can the Government protect the consumer. If this be Government in business, then let those who oppose it make the most of it, but let them apply an intelligence test and not a mere blind prejudice.

*Before U. S. Chamber of Commerce annual meeting, San Francisco, Calif., May 19.

BARCO CONCESSION SAVED

NEW YORK, May 23.—Gulf Oil Co.'s concession in Colombia was saved when plaintiffs presented in the Colombia supreme court motions to quash pending suits filed in 1928 and 1929 by the Gulf company and the minority royalty interests for reinstatement of the Barco concession, declared forfeited in 1926. The government's attorneys also moved to quash the nation's counter-suits. Filing of these motions prevents lapsing of the Gulf company's new 50-year concession on May 25.

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Decision in Champlin Case Sweeping

Upholds Curtailment to Market Demand. Declares Right of State to Prevent Economic, Underground and Surface Waste of Common Supply

Owing to the great importance of the case, establishing the constitutionality of state regulation of oil production, the decision of the U. S. Supreme Court upholding the Oklahoma conservation law is reported in detail.

There were two cases, one the appeal of the Champlin Refining Co. against the Oklahoma Corporation Commission, and the other the appeal of the Oklahoma Corporation Commission against the Champlin company, both from the District Court of the United States for the Western District of Oklahoma.

W. P. Z. German, of the Skelly Oil Co., and John H. Miley, (Attorney General J. Berry King and Jess L. Ballard, assistant attorney general of Oklahoma, and E. S. Ratliff, attorney for the corporation commission, with them on the brief,) appeared for the State. Harry O. Glasser and James M. Beck, (George S. Ramsey, Horace G. McKeever, Edgar A. DeMeules and Nathan Scarritt with them on the brief), appeared for the Champlin company.

Mr. Justice Pierce Butler delivered the opinion of the court.

The refining company by this suit seeks to enjoin the commission, attorney general and other state officers from enforcing certain provisions of c. 25 of the laws of Oklahoma enacted February 11, 1915, and certain orders of the commission on the ground that they are repugnant to the due process and equal protection clauses of the Fourteenth Amendment and the commerce clause.

The district court consisting of three judges, 28 U. S. C., sec. 380, denied plaintiff's application for a temporary injunction, and No. 122 is plaintiff's appeal from such refusal. As final judgment has been entered, this appeal will be dismissed. The final decree sustains certain regulatory provisions of the Act but declares invalid some of the penal clauses. 51 F. (2d) 823. No. 485 is plaintiff's appeal from the first mentioned portion of the decree and No. 486 is defendant's appeal from the other part.

No. 485

The Act prohibits the production of petroleum in such a manner or under such conditions as constitute waste. Section 1. Section 3 defines waste to include—in addition to its ordinary meaning—economic, underground and surface waste, and waste incident to production in excess of transportation or marketing facilities or reasonable market demands and empowers the commission to make rules and regulations for the prevention of such wastes.

Whenever full production from any common source can only be obtained under conditions constituting waste, one having the right to produce oil from such source may take only the proportion of all that may be produced therefrom without waste as the production of his wells bears to the total.

The commission is authorized to regulate the taking of oil from common sources so as to prevent unreasonable discrimination in favor of one source as against others. Section 4. Gauges are to be taken for the purpose of determining production of wells. And the commission is directed to promulgate rules and regulations and to appoint such agents as may be necessary to enforce the Act. Section 5. Since the passage of the Act the commission has from time to time made "proration orders."

Court's Findings

The court made its findings which, so far as need be given here, are indicated below:

Plaintiff is engaged in Oklahoma in the business of producing and refining crude oil and transporting and marketing it and its products in intrastate and interstate commerce. It has oil and gas leases in both the Greater Seminole and the Oklahoma City Fields. In each field it has nine wells. It owns a refinery having a daily capacity of 15,000 bbls. of crude and there produces gasoline and other products.

It has approximately 735 tank cars, operates about 470 miles of pipe line including adequate facilities for the transportation of crude oil from the fields to its refinery, and has about 256 wholesale and 263 retail gasoline stations in Oklahoma and other states which are supplied from its refinery.

At the refinery it has gas-tight steel storage tanks with a total capacity of about 645,000 bbls. It does not use earthen storage or permit its crude to run at large or waste any oil produced at its wells. All that it can produce will be utilized for commercial purposes. It also purchases much oil.

The Greater Seminole area covers a territory 15 to 20 by 8 to 10 miles and has eight or more distinct pools in formations which do not overlie each other. The first pool was discovered in 1925 and by June 15, 1931, there were 2,141 producing wells having potential production of 564,908 bbls. per day. The wells are separately owned and operated by 80 lessees. About three-fourths of them, owning wells with 40 per cent of the total potential capacity of the field, have no pipe lines or refineries and are entirely dependent for an outlet for their crude upon others who purchase and transport oil.

Five companies, owning wells with about 13 per cent of the potential production, have pipe lines or refinery connections affording a partial outlet for their production. Nineteen other companies own or control pipe lines extending into this area having a daily capacity of 468,200 bbls., and most of them from time to time purchase oil from other producers in the field.

The Oklahoma City Field, about 65 miles west of the Seminole, is about 6 by 3 miles and part of it has been divided into small lots. All of plaintiff's leases are in that portion of the field. Oil was discovered there in December, 1928, and is being produced from four different formations more than 6,000 feet below the surface.

Oklahoma City

In some parts of the area two or more overlie each other, and at many points the wells penetrate all overlying formations and are capable of producing from all of them. The field is not yet fully developed. June 15, 1931, there were 746 producing wells having an estimated potential of 2,987,993 bbls. per day. These wells are owned by 53 different lessees.

Thirty-six of them are wholly and eight are partially nonintegrated; they operate wells having about 90 per cent of total potential production. The 10 producing companies control pipe lines extending into this area with a carrying capacity of only 316,000 bbls. per day. Most of them from time to time purchase oil from other producers there.

Crude oil and natural gas occur together or in close proximity to each other, and the gas in a pool moves the contents toward the point of least resistance. When wells are drilled into a pool the oil and gas move from place to place. If some of the wells are permitted to produce a greater proportion of their capacity than others, drainage occurs from the less active to the more active. There is a heavy gas pressure in the Oklahoma City Field.

Where proportional taking from the wells in flush pools is not enforced, operators who do not have physical or market outlets are forced to produce to capacity in order to prevent drainage to others having adequate outlets. In Oklahoma prior to the passage of the Act, large quantities of oil produced in excess of transportation facilities or demand therefor were stored in surface tanks, and by reason of seepage, rain, fire and evaporation enormous waste occurred.

Uncontrolled flow of flush or semiflush wells for any considerable period exhausts an excessive amount of pressure, wastefully uses the gas and greatly lessens ultimate recovery. Appropriate utilization of gas energy is especially important in the Oklahoma City Field where, because of the great depth of the wells, the cost of artificially recovering the oil would be very high.

Proration Orders

The first of the present series of proration orders took effect August 1, 1927; and applied to the then flush and semiflush pools in the Seminole. Similar orders have been in effect almost continuously since that time.

Soon after the discovery of oil in the Oklahoma City Field, production exceeded market demand there. The first proration order applicable in that field took effect

W. P. Z. German
Attorney for the Corporation Commission of Oklahoma

October 15, 1929. Such orders usually covered short terms because of rapidly changing potential production and market demand from each of the pools.

All the proration orders attacked by plaintiff were made pursuant to Sections 1, 3, 4, 5 and 6 of the Act. Each, and the findings that it contained, were made after notice to all interested persons and were based upon evidence adduced, at the hearings. The allegations of the complaint that the orders were made by the commission without having heard the testimony of witnesses under oath or any legal evidence were not sustained before the court.

The commission construes the Act as intended to empower it to limit production to the amount of the reasonable daily market demand and to require ratable production by all taking from the common source. In current orders it has found that waste of oil will result in the prorated areas unless production is limited to such demand.

In Order No. 5,189, June 30, 1930, it found that the potential production in the United States was approximately 4,730,000 bbls. per day and that imports amounted to about 300,000 bbls. creating a supply of over 5,000,000 bbls. as against an estimated domestic and export demand of 2,800,000 bbls.

And it found that the existing stocks of crude in storage exceeded the needs of the industry and that purchasers were unwilling to buy in Oklahoma for storage in any amount sufficient to take the surplus of potential production in that State. Similar findings are contained in the commission's subsequent orders.

Based on findings of the daily potential of the Oklahoma City Field and the amount of the market outlet for oil there—that is, the amount that could be produced without waste as defined by the Act, plaintiff at the time of the trial was limited by the proration orders to about 6 per cent of the total production of its wells in that field. And the orders also operated to restrict plaintiff to much less than the potential production of its nine wells in the Seminole pools.

Potential Overproduction

The court found that at all times covered by orders involved there was a serious potential overproduction throughout the United States and particularly in the flush and semiflush pools in the Seminole and Oklahoma City Fields; that, if no curtailment were applied, crude oil for lack of market demand and adequate storage tanks would inevitably go into earthen storage and be wasted; that the full potential production exceeded all transportation and marketing facilities and market demands; that accordingly it was necessary, in order to prevent waste, that production of flush and semiflush pools should be restricted as directed by the proration orders and that to enforce such curtailment, with equity and justice to the several producers in each pool, it was necessary to enforce proportional taking from each well and lease therein and that, upon the testimony of operators and others, a comprehensive plan of curtailment and proration conforming to the rules prescribed in the Act was adopted by the commission and was set forth in its orders.

The commission, acting under Section 5 of the Act and with the consent of the governor of the State, appointed one Collins as its umpire and agent and constituted certain producers in each pool an operating committee to assist him in administering the prescribed rules and regulations. Later, one Bradford was appointed assistant umpire and agent. He spent all his time in the Oklahoma City Field, leaving Collins to serve in the other prorated areas.

They supervised the taking of gauges, ascertained daily production of prorated wells, checked the same against quantities transported and kept complete records to the end that wells in each pool should be operated in accordance with the commission's rules and that violations be detected and reported. No appropriation had been made for the payment of umpires or agents. The commission did not have sufficient regular help for the administration of the proration orders.

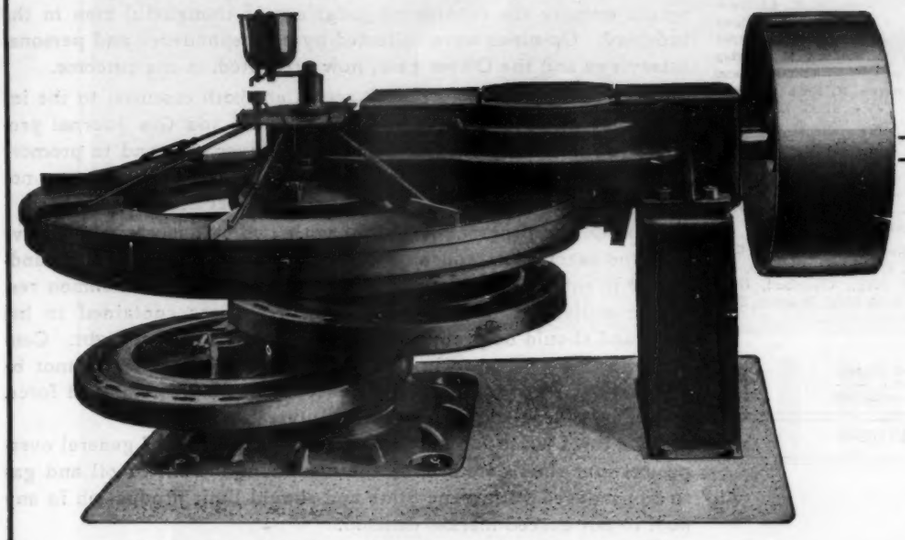
Pay of Umpires

Members of operators' committees served without pay. Collins' salary and expenses have been paid by voluntary contributions of certain producers in the Seminole Field and Bradford's by voluntary contribution of producers in the Oklahoma City Field. In each field a great majority of the producers joined to raise such funds, and contributions were prorated on the basis of production. This method of paying for such help has been followed since 1927 and at all times has been known to the commission, the governor and the public.

In that period there have been two sessions of the legislature, and it has not forbidden the practice or provided funds

(Continued on Page 74)

Reid Underpull Geared Powers



1 Eccentric 2 Eccentric

Type PG

Reid

Dust-proof Construction

The Reid Type PG Underpull Geared Power is designed for installations where the work is hard, but not sufficiently heavy enough to require a Reid Band Wheel Power.

For installations requiring less than 20 HP, powers are furnished with a 5-inch wide main gear and pinion. If more than 20 HP are required, a 7-inch wide main gear and pinion are used.

The Type PG Power is available with either one or two eccentrics. Eccentrics are placed below the main gear which permits the rods to come close to the ground, keeping strains low and conforming to best oil country practice.

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MEMBER AUDIT BUREAU OF CIRCULATIONS

A REAL PROGRAM

Curtailment is a corrective. What the oil industry needs is a preventive.

The United States Supreme Court's decision in the Oklahoma case establishes the power of the States to regulate production.

This power has been invoked heretofore only to check overproduction when it was already here with its attendant waste of oil and gas, but it can also be applied to prevent at the outset the evils that cause overproduction.

The right to take oil and gas is subject, the Supreme Court holds, to the reasonable exertion of the power of the State to prevent unnecessary loss, destruction and waste.

"And that power extends to the taker's unreasonable and wasteful use of natural gas pressure available for lifting the oil to the surface and the unreasonable and wasteful depletion of a common supply of gas and oil to the injury of others entitled to take from the same pool."

The Oil and Gas Journal has long recognized that curtailment, necessary as it was, is only an afterthought, that permanent betterment of the industry must be sought at the other end, the beginning of operations.

To this purpose The Oil and Gas Journal in the issue of July 21, 1931, began a series of articles prepared by Earl Oliver, personally, or in collaboration with Judge W. P. Z. German, outlining the engineering or legal principles of unit operation.

Following these, on April 21, 1932, appeared an article by Mr. Oliver, "Oil Industry's Problems and Remedies" in the form of question and answer, and an editorial "Remove the Cause", both of which were sent to 136 representative individuals in the industry.

An analysis of the replies is given in Mr. Oliver's article in this issue together with a proposed program for the oil industry based upon the expressions received and the principles enunciated in the series of articles.

Although the proposed program is not submitted as originating with Mr. Oliver, who, however, has long championed the principles outlined, it may be called, for easy reference, the Oliver plan.

The Oil and Gas Journal, as the representative organ of the oil industry, launched the educational campaign which culminated in the success of the co-operative movement for curtailment. The Supreme Court crowned that movement by upholding the power of State regulation but it remains to be seen how wisely or otherwise the States will use or abuse that power.

Regulation must be based on legislation and, as Mr. Oliver observes, the results of attempted legislation in Texas and in California proved that public sentiment outside the oil industry must be developed in support of any program before it can be enacted. Educating the oil industry alone will not suffice.

It was this conclusion that led The Oil and Gas Journal to inaugurate the series of Oliver articles in order that a practical plan for putting the case before the public might be evolved.

First, it was essential to draft a clear and concise program which would embody the considered judgment of thoughtful men in the industry. Opinions were collected by correspondence and personal interviews and the Oliver plan, now presented, is the outcome.

A comprehensive and united action are both essential to the industry's recovery. For that reason The Oil and Gas Journal proposes to throw its influence behind the Oliver plan and to promote it by all possible means until that plan is adopted, or weaknesses not now apparent are disclosed, or until some better plan is developed.

The Oliver program starts out with two statements which have now the sanction of approval by the highest court, that each landowner is entitled to an amount of oil or gas from the common reservoir equivalent to the extractable oil or gas contained in his land, and should be protected in the enjoyment of that right. Consequently, the pressure in the common reservoir, which cannot be utilized to its greatest advantage except as a single combined force, should be conserved to the common interest.

The third point is that the State, during periods of general overproduction, should determine the maximum amount of oil and gas to be produced within the State and should limit production in any pool to not exceed market demand.

The fourth point contemplates interstate co-operative action, either through a joint committee or through interstate compacts, and, through federal co-operation, negotiation for world conservation methods so that floods of foreign oil shall not be thrown into competition with domestic production.

The immediate objective is the enactment of necessary state and federal laws to permit general application of these principles.

It is proposed to launch this program by the naming through The Oil and Gas Journal of a planning committee selected from all factions of the industry and headed by a nationally known figure from outside the industry in whose judgment and loyalty to the public interest the various branches of the industry and the consuming public will have confidence.

It is understood that the planning committee will include representative leaders of the various groups interested, both inside and outside the industry.

To be successful, either within the industry, or with the public, conflicting attitudes or interests must be composed and reconciled. The small operator, the royalty owner and the consumer must be satisfied that the plan will be of general benefit.

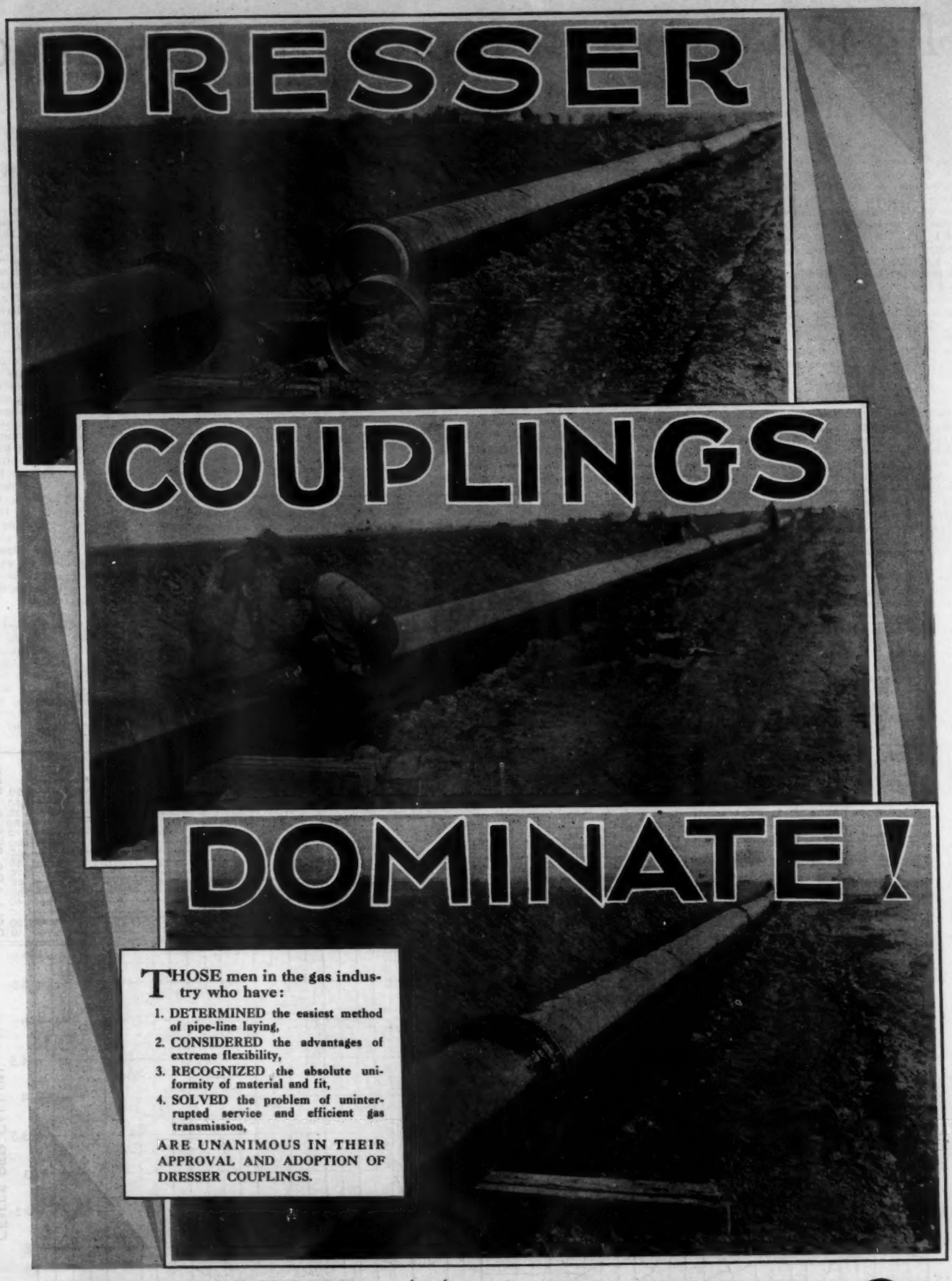
It will be the function of the planning committee, including representatives of each conflicting interest, to establish good faith and demonstrate the necessity and the advantages of the program.

It is expected, as in the early days of the campaign for co-operation in curtailment, that within the industry prejudices will beget suspicion, that scoffers will pronounce it impracticable, and mistaken interest will oppose it. But, as in the curtailment movement, The Oil and Gas Journal has confidence in the eventual good judgment and fairness of the industry.

At the same time, profiting from experience in Texas and California, the planning committee will devise means for informing public opinion so that when the industry unites on a definite program the people will have a clear knowledge of the wholesome purposes and effects sought from the legislatures.

It is probably going to be a long campaign but, started with a straightforward and easily understood program, and with scrupulous care to provide for full and free discussion of every angle and interest, the outcome can be only for the good of the industry.

It is solely with that aim in view that The Oil and Gas Journal offers the Oliver plan for the consideration of its readers and invites their active support for the planning committee when announced.



THOSE men in the gas industry who have:

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Improvement in Motor Fuel Demand

Approach of Holiday Period Stimulates Contract and Spot Business in Oklahoma. Kerosene Prices Continue Decline

By C. O. Willson

Improvement in demand for gasoline, both on contracts and spot sales, was reported by sellers in the Oklahoma (Group 3) market the first of the week. Some of the buying was in preparation for the week-end which will be lengthened by the Decoration Day holiday on Monday. Normally a three-day vacation period at this time of year would result in a large increase in gasoline consumption because car owners have sufficient time to make long drives. Just what the results will be this year remains to be seen, although the hurry-up orders from jobbers and the bulk stations of company-owned facilities indicated that those in direct touch with consuming markets expected the heaviest demand of the year.

Decoration Day in the greater part of the country is considered by oil companies as inaugurating the main consuming period extending over the next three months. For a period of five years, based on Bureau of Mines figures, gasoline shipments from refineries for June, July and August were 28.79 per cent of the total for the year. Shipments to domestic consumers were 28.91 per cent of the total. It should be the most profitable period for both refiners and distributors, and, due to the generally unsatisfactory conditions of the past year, special significance is attached to the quarter period of heaviest gasoline consumption this year, with the hope that it will place the oil business in the black for the entire twelve months.

The improved demand brought a slightly better tone to the Oklahoma tank car market which is yet to recover the ground lost earlier in the month. The low octane U. S. Motor gasoline generally was quoted to the trade at a price range of 4¼ to 4¾ cents. Some material was being quoted both below and above this range. A few of the larger refiners who have been buying distress gasoline from time to time over the past two months made purchases the latter part of last week and it is understood that additional business will be placed this week.

Changes in the remainder of the refined market for the most part represented reductions. Kerosene continued to slump and the 41-43 water white grade was offered to the trade at a low of 3¾ cents. Some material which does not meet all specifications sold as low as 3⅜ cents basis Group 3. The weakness in kerosene was reflected in the furnace oil and tractor distillates.

Low gravity industrial fuels were steady, but the higher gravities used as furnace oil material were offered at lower prices. Exporters were reported buying limited quantities of Oklahoma wax at 1.9 cents per pound f.o.b. New Orleans, which means a net back to the Oklahoma refiner of about 1⅝ cents per pound. This represents a reduction of one-eighth cent in the previous low for the 124-126 grade.

Third Grade Gasoline

Among the trade there is considerable discussion as to the part the third grade gasoline is to play in the gasoline market over the next several months. While few tank car contracts of refiners are based on the tank wagon and service station prices for the third grade, the volume of business does have a direct bearing on the refinery situation, and it is from this angle it is being discussed. Most refiners feel a substantial increase in the volume of third grade business as now appears certain will be reflected in a lessened demand for the regular and premium grades and tend to disturb the tank car market at a time when the sellers are attempting to advance quotations to the point where they will permit a small profit based on the present prices for crude oil. Contrary to this view, one observer believes that increased retail sales of the third grade will tend to improve the demand for the low octane gasoline on the spot market and assure active trading which will make for favorable prices not only in that grade but in the higher octane material. Regardless of which of these views is the soundest, it is certain that the third grade gasoline is to play an increasingly important part in the merchandizing of gasoline.

Various opinions are expressed as to the place of the third grade in petroleum marketing with many taking the position that it should not have been introduced and the only remedy is to drop it immediately and concentrate sales on the regular and premium grades. It was first used about a year ago throughout the Middle West and Southwest states

REFINED MARKET BAROMETER

Price changes in refinery tank car prices over the past week throughout the United States for domestic and export movement were of minor importance. A holiday period extending from Saturday through Decoration Day on Monday was reflected in increased gasoline shipments from refineries and bulk terminals marking the start of the year's main consuming season. Refinery quotations on gasoline were slightly lower in the Mid-Continent and East Coast but firm in other sections. Price changes for the week in kerosene were reductions and weakness also was apparent in spot sales of distillates. Heavy fuels were firm with the recent price advances generally adopted at Gulf Coast and East Coast refineries and bulk terminals. Natural gasolines were unchanged. A price war in California resulted in substantial reductions in California, neutral oils furnishing the only change in the lubricant lists. Wax prices lower in the Mid-Continent.

Mid-Continent—Improved buying first of week apparently stopped decline in refinery gasoline prices. Natural gasoline firm. Kerosene, tractor fuel and furnace oil weak. Low gravity fuels firm. No change in lubricants. Wax prices lower.

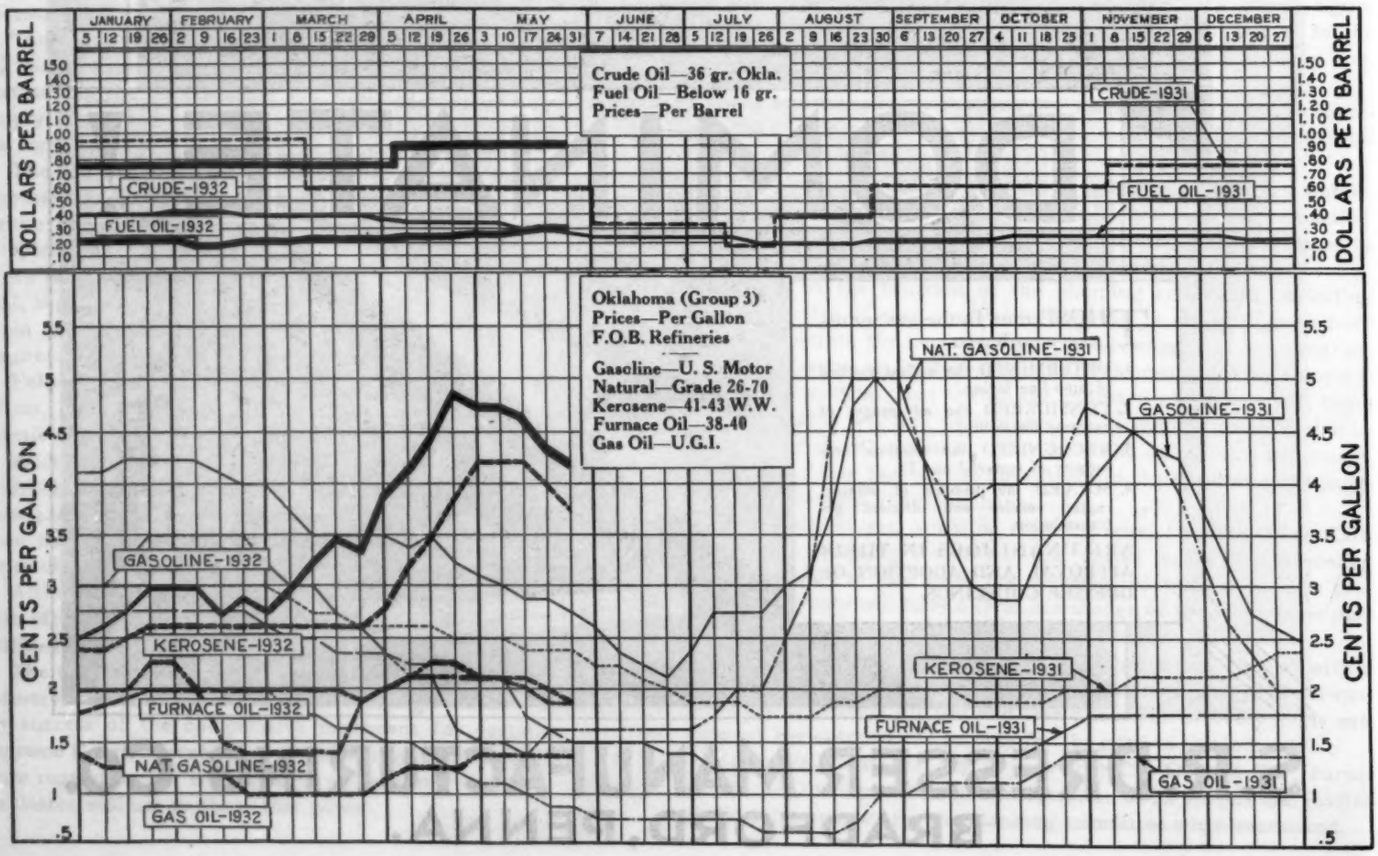
East Coast—Gasoline prices at refineries firm despite large reduction in New York City tank wagon and service station quotations. Kerosene quiet. Fuel oil demand improves. Other products unchanged.

Gulf Coast—Prices steady despite slow movement. All companies adopt recent advances in fuel oils. Export market dull.

Chicago—Better tone to gasoline market first of week. Kerosene and furnace oil prices lower. Special naphtha prices reduced.

Pennsylvania—Gasoline and kerosene steady. Improved demand for lubricants. Wax slow.

California—Price war brings reductions in red neutral quotations. Other products unchanged.



for the purpose of meeting the competition of price cutters who had taken advantage of the wide margins between tank car and service station prices and by obtaining a large volume of business were able to undersell the regular dealers 2 or more cents per gallon. By meeting this competition with a third grade, the regular distributors have been able to regain a large part of their lost business but at the same time complications have become apparent which have caused some to question whether or not the remedy was not worse than the disease.

Adopt White Grade

Until recent weeks the third grade was generally colored, the most popular color being blue to distinguish it from a water white regular grade and red Ethyl Gasoline or some other premium grade. Several companies, including large distributors, are not coloring their third grade so they are now selling two white grades with a differential of at least 2 cents in price. The explanation of this policy is that the cut price station operators are selling a white grade exclusively and are leading the consuming trade to believe that the blue coloring indicates inferiority. Close observers of retail marketing conditions are in agreement that a substantial percentage of consumers are color conscious in their gasoline purchases and the colors are associated with the supposed relative quality of motor fuels.

The fear is expressed that if the policy of using white gasoline as a third grade is generally adopted the regular grade will lose volume to the point where it will be dropped. This in effect would mean a drop in price of 2 cents not only in the regular grade but the price level of the premium grade would also be reduced 2 cents. In brief, the distributing end would return to two grades with price levels established to meet the competition of the so-called price-cutters. This narrowing of margins obviously would embarass many retail operations where duplications of services has resulted in a small volume of business per unit and relatively high costs per gallon of products sold.

A few refiners and distributors are not alarmed by this trend which is feared by others. They feel that a narrowing of margins for distribution by building up volume at the best located distributing units and the closing down of other units is inevitable and highly desirable and they look forward to the day when these margins will make it impossible for outsiders to constantly disturb the retail markets with their price cutting activities. These refiners are not concerned as to whether this situation is brought about via the third grade or some other method. The adoption of a third grade motor oil selling at 15 cents per quart by several distributors is another phase to this problem which aims at volume per station rather than wide margins and multiple units in the distribution of petroleum products.

This development promises to have wide significance in the matter of new contracts. Obviously refiners cannot longer afford to guarantee jobbers 5 or more cents per gallon between the delivered tank car price on gasoline and the service station prices if the price levels of a third grade are to be the dominating factor in retail market.

Gasoline and Naphtha

The under 57 U. S. Motor gasoline sold to the trade as low as 4⅛ cents last week. The first of this week it returned to the 4¼-cent low with sales reported up to 5 cents a gallon. Resale material, some of which was not strictly U. S. Motor gasoline, sold at 4 cents on Monday in Oklahoma. The amount of this material is limited and a purchase of 25 or more cars would remove it as a market factor.

There has been no improvement in the demand for the higher gravity motor fuels which are as slow as they ever have been in the Oklahoma market. Lack of export buying and the stress placed on octane numbers rather than gravity is responsible for this situation. Blending naphthas varying in endpoints from 450 to 437 are active at prices which range from 4¼ to 4½ cents.

Natural Gasolines

Some improvement also was noted in the demand for natural gasolines the first of the week, although the price changes were of minor importance. The 26-70 grade was generally quoted in Oklahoma at a price range of 1⅞ to 2 cents. Higher vapor pressure grades sold at 1¾ cents.

There is no little uniformity among the manufacturers in their quotations on lower vapor pressure grades. In addition to the vapor pressures, recoveries are also important in determining prices. Most manufacturers were asking a low of 2⅜ cents for 18-55 material although some 12-pound low recovery vapor pressure material sold at the same price last week. Manufacturers were selling 12-pound material of high recovery at 3¼ to 3¾ cents and 10-pound or less was bringing a minimum of 4 cents.

Other Products

The price situation in regard to kerosene and distillates has already been explained. The higher gravity distillates were weaker than the lower gravities, a condition partially accounted for by the fact that the low-gravity grades are shipped on the heavy oil freight rates resulting in a saving to the buyers.

The low-gravity grades of industrial fuels are firm at a low of 32½ cents. There are some grades of residuum from cracking still operations which are not suitable for all industrial uses which are selling as low as 25 cents. The 26 to 30 gravity fuel oils of low gravity are not as strong as they were during the winter and spring months.

The demand for all lubricants is improving and prices are steady. Some sellers of bright stocks report a much better demand than they had expected following the recent advances in prices.

RUMANIAN PIPE BIDS

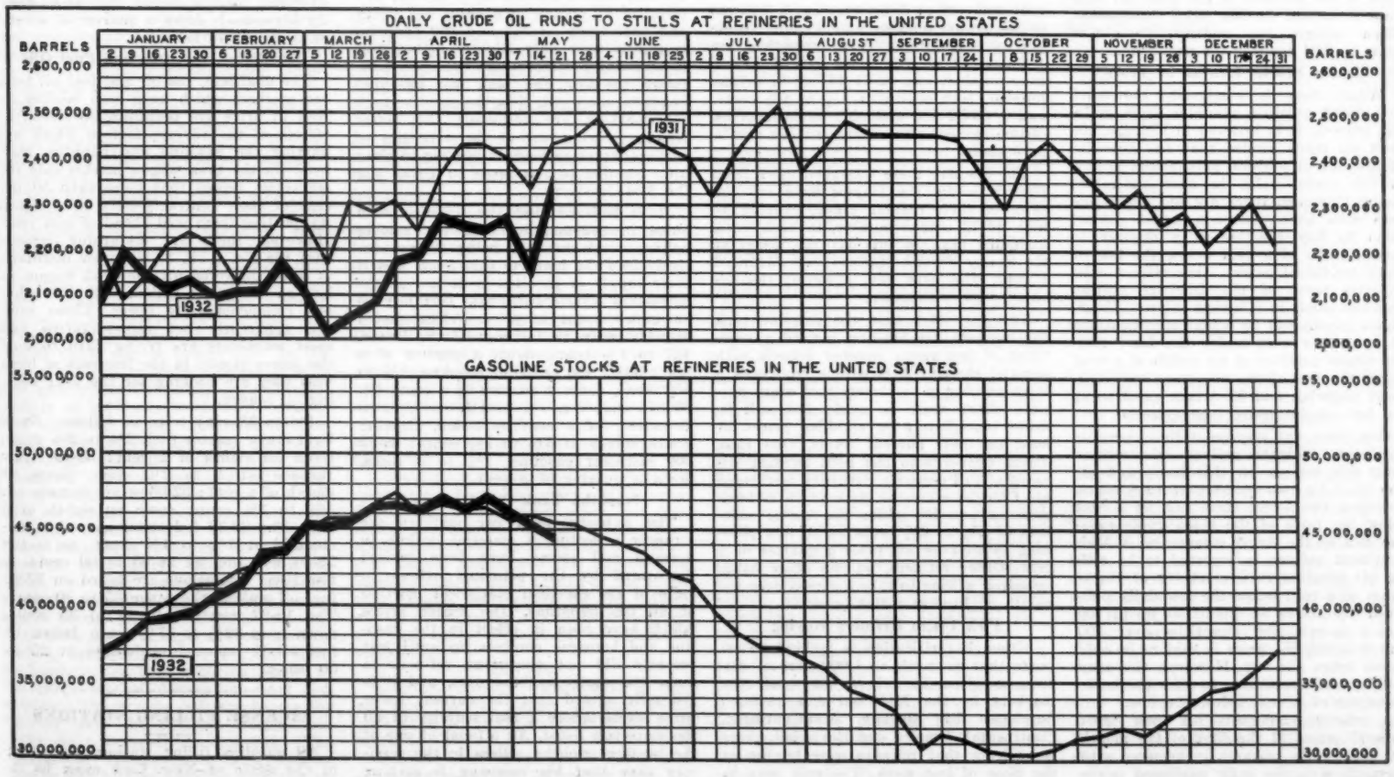
The pipe line authorities in Rumania, 26, Strada Sevastopol, Bucharest, have received bids for weldless steel pipe, 7,500 meters of 10-inch and 5,000 meters of 5-inch.

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to still, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending May 21:

	Week ending May 21				Week ending May 14				Week ending May 16, 1931			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100 0	453,100	6,387,000	6,211,000	100.0	447,600	6,441,000	5,994,000	100.0	492,900	8,443,000	8,638,000
Appalachian	91.8	108,000	1,760,000	1,005,000	91.8	96,400	1,701,000	1,104,000	92.8	87,400	1,642,000	1,125,000
Indiana, Illinois, Kentucky	98.9	306,700	6,545,000	4,122,000	98 9	307,700	6,450,000	4,139,000	97.5	332,300	6,382,000	3,653,000
Oklahoma, Kansas, Missouri	89.6	246,000	3,995,000	3,335,000	89.6	263,100	3,992,000	3,304,000	89.4	274,700	3,676,000	4,064,000
Texas	91.3	580,900	8,064,000	8,959,000	91 3	585,600	8,062,000	8,888,000	91.9	574,000	8,022,000	9,341,000
Louisiana and Arkansas	98.9	164,100	1,853,000	4,726,000	98.9	161,300	1,996,000	4,659,000	98.3	170,600	2,208,000	2,410,000
Rocky Mountain	89 4	42,900	2,046,000	643,000	89 4	38,000	2,045,000	638,000	93.1	61,100	1,897,000	845,000
California	96.4	462,700	14,053,000	96,545,000	96.7	459,900	14,111,000	96,060,000	98.8	441,100	13,393,000	98,408,000
Total United States	95.1	2,364,400	44,703,000	125,546,000	95.1	2,359,600	44,798,000	124,786,000	95.7	2,434,100	45,663,000	128,484,000
Texas Gulf Coast	99 8	480,900	6,451,000	6,138,000	99.8	470,300	6,451,000	6,089,000	100 0	429,700	6,863,000	6,629,000
Louisiana Gulf Coast	100.0	114,600	1,703,000	3,894,000	100.0	110,000	1,842,000	3,927,000	100.0	116,300	2,056,000	1,502,000

(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) gas and fuel oil stocks.



All data based on weekly reports of the American Petroleum Institute. Figures for last week not shown in graph but are included in above table.

Chicago Tank Car Market Looks Better

Tone Shows Improvement Following a Week of Price Cutting Which Saw U. S. Motor Grade Material Selling at 4 Cents

By Robert C. Conine
Chicago Bureau, The Oil and Gas Journal, 6 North Michigan Ave.

CHICAGO, May 23.—The tone of the gasoline tank car markets is slightly better after a week of price cutting which sent the U. S. Motor grade material momentarily to the 4-cent level. The sellers have had an opportunity to test demand under favorable weather conditions and the result has been far from satisfactory. Estimates of the current decline in gasoline consumption range from 5 to 10 per cent, and indicate, according to observers, that the retail gasoline business is due to experience the volume losses felt much earlier in other commerce. Until recently the heavy stocks of gasoline in the country were in strong hands and did not constitute a menace to the markets. The supposed advent of the expanding demand season, however, encouraged various refiners who are not in a financial position to play a waiting game to boost their crude oil runs to stills, with the result that there is now considerable distress material available. It is unfortunate that softness should develop in the gasoline markets just before the Memorial Day business which has always spurred jobber activity.

On the favorable side is the behavior of a number of jobbers. These jobbers are asking for car numbers at the time they place their orders and show plainly that they are letting their tanks go dry before buying. The jobbers are not worried about the tank wagon and service station markets as these appear to be firm, and they are naturally seeking to take advantage of the softness in the tank car markets to obtain further price concessions. Their margin has widened from 6.06 cents to 6.31 cents in the past week.

Jobber Stocks Lowest in Years

While there is admittedly too much low-priced gasoline available from refining sources, it is believed in Chicago district oil trade circles that the quantity of gasoline at jobbers' bulk plants is now at the lowest point in more than two years. However, there are too many jobbers who have contracts which permit them to buy gasoline at a quarter to three-eighths of a cent below the low of daily published prices. One refiner who supplies most of the trackage station gasoline sold in Chicago offers U. S. Motor gasoline of no octane specifications at a quarter cent under the low; middle octane gasoline at an eighth of a cent under the low of the no octane specifications material, and 62 octane gasoline at the low of the low octane material.

One price cut service station operator purchases 200,000 gallons of gasoline from this refiner on this basis and offers it at his two stations at 12½ cents, including the 3-cent state tax, or 1 cent below the price of the third grade gasoline sold by the larger companies. A Mid-Continent refiner is reported to be selling his gasoline to a marketer at three-eighths of a cent below the low daily published quotations on quantities up to 100 cars a month. For quantities over 100 cars a month the price is said to be held a cent below the low. However, this may be this marketer is able to offer the trade a quarter of a cent below the low.

A refiner who posts his own "spot market" prices at the first of the month and revises his markets in keeping with fluctuations in the daily published prices has been caught apparently by the more or less sudden downward break in the gasoline markets. Marketers say they cannot get delivery from this refiner on gasoline quoted at 3⅞ cents, and it is reported that this refiner is oversold. This refiner, incidently, is the source of high octane gasoline which is being sold at Aurora, Ill., at a price 1 cent below the third grade gasoline posting of competing companies. The price is 12.5 cents, including tax, and one station offering this gasoline reports a business of more than 60,000 gallons a month. At Joliet, Ill., where the price of the third grade gasoline was advanced recently by 3 cents, the failure of trackage station competition to follow the advance has resulted in a cut in the service station price from 15 cents to 13.5 cents.

Character of Competition Changed

In the Chicago district the character of the competition from trackage station operators has changed from last year. The price cutters are keenly interested in high octane natural gasolines and naphthas, and although the signs at their stations show peculiarly wide ranges in octane specifications, such as 64-77 octane number and the like, the stress is on the quality and the price is uniformly above the third grade posting of major competitors by 2 to 3 cents. Colored gasolines are not popular among the price cutters who argue that the dye masks impurities.

Several trackage station operators with whom gasoline costs were discussed said that they were turning to blending exclusively. A Chicago marketer offers a 26-pound natural gasoline of 75 octane number and 92 per cent recovery at 1¾ cents; 22-pound of 75 octane number and 93 per cent recovery at 2 cents; 18-pound of 75 octane and 95 per cent recovery at 2⅜ cents; 15-pound of 75 octane number and 96 per cent recovery at 2¾ cents; 11-pound of 65 octane number and 98 per cent recovery at 3⅛ cents, and a 9-pound of 65 octane number and 98 plus recovery at 4⅛ cents. Three naphthas are popular. These are 50-52 540 of 55 octane number, and 52-54 437 of 57 octane number, both selling at 4½ to 4¾ cents, and a 50-52 400 endpoint naphtha of 63 octane number offered to the trade at 4⅞ to 5 cents.

For one day there was good news from Detroit where the majors have cut the price of their regular grade, ranging as high as 72 octane number, to 12.5 cents, including tax. On this day the prices at the Sunny Service stations was advanced 1 cent. The next day, however, the advance was withdrawn.

The very fact that the gasoline tank car markets are heading toward a repetition of last year's summer debacle with demand showing a recession, convinces a large number of marketers that every possible effort must be made and will be made immediately to stabilize prices at least on their current levels. One East Texas refiner who has been running his plant at full capacity Saturday instructed his Chicago office to book at little business as possible under the ruling markets of 2¼ to 2½ cents as he was planning to advance his price a quarter of a cent. Other refiners, on the other hand, appeared willing to take business over the month of June at a flat price.

Pick Up in Refinery Buying

Although verification is lacking on reports that as much as 1,000 cars of distress gasoline have been taken off the markets in the Mid-Continent through purchases by Sinclair, Mid-Continent, Continental, Empire and Barnsdall, there is evidence that refiners were buying at the close of last week. The only way in which the gasoline markets can be improved and maintained for the summer season, of course, is by a drastic cut in the quantity of crude oil run to the stills. Certain major refiners say that they are not interested in buying distress gasoline to keep it off the markets, and give as their reason their experience in the past in which the refiners so relieved promptly ran up their gasoline storage again. The fact that the rapid break in the gasoline tank car markets last week was stopped short is indicative of the general feeling that means will be found to mend a bad situation.

It is reported that in the main the refiners have readjusted their runs on the basis of a lower motoring season consumption than was expected.

It is not known at this time whether the action of Standard Oil Co. of Indiana and its crude oil purchasing subsidiary in announcing that the company would "reduce materially" its purchases of crude oil in Kansas, Oklahoma and Texas, effective immediately, indicates plans for further curtailment of refining operations. This action, together with the reports that other refiners are lowering their crude oil takings, now furnishes marketers in the Chicago district with a new worry. This is whether the crude oil prices can be maintained, and if not, how much the gasoline tank wagon and service station prices will be reduced.

Gasoline Tank Car Prices

The gasoline tank car markets have been sagging in price since more than two weeks ago. Up to May 19 the downward movement had been slow on representative business. Then the prices broke sharply with considerable U. S. Motor gasoline selling to the trade at 4⅛ cents and a smaller volume placed at 4 cents. Marketers at the close of the week were buying at 3⅞ cents regularly for resale. Certain sellers offered 400 endpoint material of 62 octane number at 4¼ cents, and quotations on 375 and 360 endpoint materials were only slightly better. Due to seasonal considerations the spread between the low and high test gasolines has been narrowed. Now the gasoline tank car markets are reflecting the better feeling growing out of the activities of various larger refiners in seeking to clear up a number of soft spots in Texas and the Mid-Continent.

It is believed that the promise of a bulge in consumption over the coming holiday week-end will bring jobbers actively into the markets this week, and if their supply of gasoline is as low as the marketers believe there will certainly be an improvement in price. Prices quoted Monday were as follows: U. S. Motor, 4¼ to 4½ cents, down a quarter of a cent; 60-62 400 endpoint gasoline, 4⅜ to 4⅝ cents, down a quarter of a cent; 64-66 375 endpoint, 4⅝ to 4⅞ cents, down a quarter of a cent; aviation, fighting grade, steady at 5⅞ to 7½ cents; 68-70 360 endpoint gasoline, 4¾ to 5 cents, down a quarter of a cent.

Naphtha Tank Car Markets

The naphtha tank car markets are strongly reflecting a material decline in demand and prices have been revised downward by the principal sellers in spite of the excellent statistical position of all the naphthas. The higher prices which have been in effect in the gasoline and kerosene markets up until just recently did not encourage refiners to make the sharp naphtha cuts, and it is generally agreed that the current lower price levels ignore a real scarcity in all the materials listed. An official of one of the leading naphtha sellers in the territory says that his company is making up a shipment of naphthas to be moved from New Orleans to New York, May 25, by tanker and is finding it impossible to obtain the full cargo. This shipper says that there is a marked shortage in V.M.&P. naphtha and Stoddard solvent.

Price reductions were announced on May 18 and 19, by two of the larger marketers who quote on the Group 3 basis. A third marketer whose posted prices are listed unchanged is understood not to be quoting on the Group 3 basis. Ruling special naphtha markets Monday showed the following revisions: Cleaners' naphtha, 200-320, down to 6¼ cents and 6½ cents from 6¾ cents; lacquer diluent, 180-250, down to 8 and 8½ cents from 9 cents; lacquer diluent, 140-200, down to 8½ and 8¾ cents from 9 cents. One seller is offering a lacquer diluent of 185-205 initial and 275-290 endpoint at 7½ cents. Rubber solvent is down to 6 and 6½ cents from 6½ and 7½ cents; Stoddard solvent is down to 5½ and 5¾ cents from 6 and 6¾ cents; petroleum thinner is down to 4¾ and 5¼ cents from 4¾ and 5½ cents; V.M.&P. naphtha is down to 5¼ and 6 cents from 5¼ and 6 cents. The higher endpoint thinner is unchanged at 3⅞ and 5 cents. Blending naphtha, 50-52 gravity and 450 endpoint, advanced an eighth of a cent to 4½ and 4¾ cents.

Kerosene Tank Car Markets

The kerosene tank car markets are lower this week although an increase in demand is reported in the Southwest where early crops are being harvested. The statistical position of the material is not as good as it has been, but the quantity is still far from excessive. In the Chicago district there has been a slight pickup in demand from nonrecurring sources, such as flushing of radiators, spring cleaning, and the like. Prices quoted Monday were 3¾ to 4 cents for the 41-43 water white material, and 3⅞ to 4⅛ cents for the 42-44 water white kerosene. The 41-43 gravity kerosene is down a quarter of a cent, as is the 42-44 material.

Distillates, Gas Oils and Fuel Oils

The distillate, gas oil and fuel oil tank car markets which have been holding up well in price are beginning to show the effects of the adverse factors which are hurting the gasoline and naphtha markets. On the tank wagon market side the marketers report that more than 50 per cent of their contracts have been signed up, putting them well ahead of last year. However, there are disturbing reports that the No. 1 oil, 38-40 straw distillate, is being delivered off the tank wagon as low as 5 cents a gallon, with the other oils commensurately lower. These sales are apparently not representative and most marketers are trying hard to hold the prices steady in the interests of business they are booking for the next heating oil season.

Prices Monday were as follows: 38-40 light straw tractor fuel, 2⅛ to 2⅜ cents, down an eighth of a cent; 38-40 straw furnace oil, 2 to 2⅛ cents, down an eighth of a cent; 32-36 straw furnace oil, 1¾ to 1⅞ cents, down an eighth of a cent. The 32-36 industrial gas oil is unchanged at 1¼ to 1⅜ cents, as is the 28-30 zero fuel oil at 55 to 60 cents. A few lower quotations are heard on 22-26 fuel oil making the range 35 to 40 cents. The 18-22 material is 30 to 35 cents, down from 32½ to 37½ cents. Below 18 fuel oil is reported unchanged at 25 to 30 cents.

LICENSE FILLING STATIONS

All gasoline filling stations operating in the State of New York must be licensed by July 1. The fee is $2.

Eastern Coast Markets Continue Firm

Recent Advances in Gasoline, Fuel Oil, Diesel Oil and Lubricants Well Maintained, With Good Prospects for Summer

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Suite 2803, No. 19 Rector Street

NEW YORK, May 23.—Continued firmness was in evidence in East Coast refined products markets during the past week, and, while no further important price revisions developed, recent advances in gasoline, fuel and Diesel oils, and lubs were well maintained. Gallonage was well maintained in the markets for the major products, and indications favored a continued heavy volume over the summer months on gasoline and lub oils.

Standard Oil Co. of New York late in the week took the leadership among the major interests in combatting the growing price cutting competition which had come to the fore as a market factor, and announced, effective May 21, a reduction of 4 cents per gallon in service station prices in New York City territory, and a 2-cent drop in its tank wagon price in this area. The cut brings retail gasoline down to 12½ cents a gallon, including state tax of 3 cents, and reduces dealers' margins to 3 cents per gallon, against 5 cents previously allowed, thus narrowing the spread to the point where dealers inclined to cut prices will not be able to damage the market position as much as has hitherto been the case. The change by Socony was only a local matter, and thus far has not affected the remainder of the company's territory.

Committed to Curtailment of Runs

Leading East Coast refineries appear committed to a definite policy of rigorous curtailment of runs for the summer season, and if present operating schedules are adhered to, as appears probable for the next few months, it is evident that gasoline and other products will be drawn from storage, further strengthening the statistical position of the industry in this section.

Rumors of probable heavy shipments of distressed California gasoline to the Atlantic Seaboard, which led to the recent report that one major company would serve as the purchaser of this motor fuel and prorate it among other distributors as a step toward maintenance of stabilized markets in the East, have been generally discounted in trade circles. While it is considered likely that California shipments will show a seasonal upswing during the summer months, it is regarded as extremely unlikely that any controlled flood from the Pacific Coast may be looked for. In the first place, the principal holders of surplus gasoline in California are affiliated, directly or indirectly, with major companies operating along the Atlantic Seaboard, thus discounting the possibility that these interests will initiate any "dumping" tactics. Secondly, with present price levels, the East Coast does not offer an attractive market for California refiners. Some interests on the Pacific Coast have been sounding out eastern markets, particularly with a view of tying up with independent Atlantic Seaboard operators with sufficient storage to handle gasoline in cargo lots, but aside from seven or eight cargoes already booked, aggregating some 500,000 bbls., no business has been reported placed in the cargo market during the past few months. The cargoes referred to are for delivery over the summer months and really do not constitute dumping. The number of independents with marine storage and marine handling facilities on the Atlantic Seaboard is limited, and most of these independents already have their own connections for acquiring gasoline and would not be in the market for the Pacific Coast product in a large way.

Eastern refiners, in fact, are more concerned with the possibility of sharply increased shipments of "third-grade gasoline" from the Gulf Coast than they are with the California "menace," although recent developments have indicated that the flow of low-grade gasoline from the Mid-Continent here this summer will not be as large as predicted.

Refinery Gasoline

Leading sellers continue to quote motor fuel at 6¾ to 7 cents per gallon in tank car lots for gasoline under 65 octane number, with 65 octane number and above unchanged at 7 to 7¼ cents. There has been a good demand for both grades throughout the week, and jobbers are adhering to their policy of keeping storage full. Despite reports indicating a slight weakening in interior gasoline markets, the situation here remains steady, and price cutting among the major interests is virtually nonexistent in the ordinary run of business.

Kerosene

Continued quiet prevailed in refinery markets during the past week, with posted prices for 41-43 water white remaining unchanged at 5½ to 6 cents per gallon, in tank car lots. Jobbing demand was inactive, and refiners were expecting a continuance of current slackness until about the middle of June, when heavy demand from vacation resort areas normally gets under way.

Tank wagon kerosene markets reflected the dullness shown in the refinery division of the trade, and quotations were without change throughout the territory.

Fuel Oil

Gallonage in the market for bunker "C" fuel oil has not been affected by the recent price advances, and a steady undertone prevailed throughout the week, with leading sellers posting 75 cents per barrel, in bulk, f.o.b. terminals, at principal Atlantic ports. At Philadelphia, where outstanding firmness has been shown in recent months, some interests are posting 80 cents per barrel for bunker "C," although it is reported that the bulk of the business at that port is going through at the inside price.

There has been some revival in marine activity in the port of New York and refiners report that current contract deliveries are running ahead of those during recent months.

Diesel Oil

A steady undertone prevailed in the Diesel oil market last week, and refiners were uniformly quoting at the recently advanced price of $1.50 per barrel, in bulk, f.o.b. marine terminals. Contract deliveries were accounting for the bulk of the business, although spot sales to shore consuming interests had picked up somewhat.

Considerable competition is still being encountered from Rumanian and Russian Diesel oils at European ports, but Rumania has recently advanced f.o.b. Constanza quotations on Diesel oil, and Russian selling prices are also expected to work to higher levels abroad in the event that current negotiations for the rationalization of the Soviet's oil-exporting operations carry through to a successful conclusion.

Gas Oil

Routine contract withdrawals of gas oil were reported during the past week, with little activity discernible in the spot market.

Refiners continue to post a price of 4 cents per gallon for 28 gravity plus recycled stock, in tank car lots, although some oil of this grade can still be picked up at 3¾ cents in some quarters of the market.

Demand for low-grade gas oil for delivery on furnace oil contracts has virtually ended for the season.

Furnace Oil

Marketers are busy lining up their contract business for the 1932-33 heating season, and already have a substantial gallonage on their books. Spot demand in the tank wagon market was slack, and prices were quotably unchanged on all grades.

Tank car movement of furnace oil was light, with shipments about over for the season. Principal refiners are expected to quote one-half cent per gallon over the current season's quotations in their contract bookings for contract deliveries throughout the next heating season.

Paraffin Wax

There has been a slight upturn in demand from the paper trade during the past week, and other consuming industries were also ordering wax in slightly better volume. Demand was centering largely on the fully refined grades, prices for which were unchanged.

A moderate export inquiry was reported last week on both crude scale and fully refined grades. European buyers were showing a little more interest in offerings, and inquiries from South American had also shown some improvement.

Petrolatum

Hand-to-mouth trading was reported on the spot position, and quotations were unchanged on all grades. Cream, snow white and lily white were most in demand locally during the week, although the lower grades were coming in for more inquiry from industrial consumers.

Bookings of petrolatum for shipment during the third quarter of the year are reported to be much smaller than is normally the case, and for this reason manufacturers are looking for more activity in the spot market during the summer months.

Lubs

Bright stock was coming in for a continued active demand last week, and prices were well maintained at recent advances on both the light and the dark grades. Spot 600 steam refined was also moving in good volume, with the market firm, reflecting strength evident at the refineries. Other grades of cylinder oils were also showing activity.

Pale and red oils continued rather sluggish, with tank car movement slow and little business passing in the spot market. Quotations remained unchanged.

Export inquiry for cylinder oils has held up well, with Europe taking stocks in substantial quantities, while a good movement to South American countries is also in progress.

Gulf Export Market

Continued inactivity was reported in the Gulf export market during the week, with quotations nominally unchanged on both gasoline and kerosenes. No cargo sales were reported during the week, and no new inquiries came into the market. The two inquiries for part cargoes of 64-66 gasoline which were reported from France during the previous week were withdrawn, and it was understood that this business had gone to Rumania.

With export operators looking for a drop of about 10 per cent in gasoline exports this year, considerable significance is attached to the international oil conference now in progress here. If the conferences are carried through to a successful culmination, it is felt, improvement in world oil prices will tend to offset the drop in volume anticipated by American exporting companies this year, and substantially better conditions in the export division of the trade.

Rumanian export prices have again been marked up on most products. The f.o.b. Constanza quotations as of May 5 were as follows: Gasoline, 730 gravity, $17.13 per ton, an increase of 61 cents over the preceding week; heavy gasoline, $12.27 per ton, an advance of 61 cents per ton; lamp oil, $6.46 per ton, up 26 cents; and gas oil, $5.59 per ton, an advance of 39 cents per ton.

Petroleum Exports

Moderate increases in export shipments of most major refined products were reported during the week, although there were no developments of other than routine interest during the period.

The following table shows exports of principal refined petroleum products from the port of New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	May 14	May 7	Apr. 30
Gasoline	77,000	21,000	23,000
Naphtha	610,000	172,000	3,000
Kerosene	106,000	16,000	3,000
Fuel and gas oil	14,000	5,000	1,270,000
Lubricating oil	745,000	345,000	1,848,000
Petroleum, ref.	305,000	245,000	370,000
	Pounds		
Petrolatum	35,000	.....	.....
Paraffin wax	2,210,000	690,000	595,000
Refined	60,000	56,000	60,000
Scale	150,000	.....	.....
Lubricating grease	645,000	635,000	875,000

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended May 14 totaled 2,050,000 bbls., an average of 292,857 bbls. daily compared with 1,660,000 bbls., a daily average of 237,143 bbls. for the previous week, and a daily average of 346,867 bbls. for the month of April. March imports averaged 338,161 bbls. per day. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	244,000
Boston	64,000
New York	1,221,000
Philadelphia	313,000
Others	161,000
Total	2,003,000
Daily average	286,143
At Gulf Coast ports—	
Tampa	47,000
Total	47,000
Daily average	6,714
At all United States ports—	
Total	2,050,000
Daily average	292,857
Daily average April	346,867

Distribution of total imports during the week ended May 14 follows:

Crude	1,032,000
Gasoline	301,000
Fuel oil	717,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports during the week ended May 14 were confined to one cargo of 117,000 bbls. of gasoline received at Philadelphia. This was a daily average of 16,714 bbls., and compared with 51,000 bbls., or 7,286 bbls. daily during the previous week, a daily average of 31,533 bbls. during April and a daily average of 11,355 bbls. during March.

Three cargoes were reported en route from California to the East Coast during the week, as follows:

For Philadelphia—115,000 bbls. of gasoline on the eastern Sun (Sun Oil Co.).

For New York—80,000 bbls. of gasoline on the Betterton (Associated Oil Co.).

For Seawaren, N. J.—81,000 bbls. of kerosene on the Meton.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINES

OKLAHOMA (Group 3)—	May 24		May 17	
*U. S. Motor	.04¼	.04⅜	.04⅜	.05
60-62 400	.04⅜	.04¾	.04½	.05¼
64-66 390	.04½	.05	.04⅝	.05¼
64-66 375	.04⅝	.05	.04¾	.05¼
68-70 350	.04¾	.05¼	.04⅞	.05⅜
NORTH TEXAS—				
*U. S. Motor	.04⅛	.04½	.04⅛	.04½
60-62 400	.04¼	.04⅝	.04⅜	.04⅝
64-66 390	.04⅜	.04¾	.04½	.04¾
64-66 375	.04½	.05	.04⅝	.04¾
64-66 360	.04⅝	.05¼	.04¾	.05
†NORTH LOUISIANA—				
*U. S. Motor	.04⅞		.05¼	
60-62 400	.05		.05¼	.05⅜
†ARKANSAS—				
*U. S. Motor	.04⅞		.05¼	
CHICAGO Based on Okla. (Group 3)—				
*U. S. Motor	.04¼	.04½	.04½	.04¾
60-62 400	.04⅜	.04⅝	.04⅝	.04⅞
64-66 375	.04⅝	.04⅞	.04⅞	.05⅛
Aviation fighting grade	.05⅞	.07½	.05⅞	.07½
68-70 360	.04¾	.05	.05	.05¼

Octane Ratings—Above quotations cover price ranges on gasoline in which no octane rating is given. Week of May 24, in the case of the U. S. Motor and 60-62 400 endpoint grades where an octane rating of 57-65, inclusive, is guaranteed, prices are three-eighths cent per gallon higher than quotations shown in above tables; where an octane rating of better than 65 is guaranteed, the prices are five-eighths cent higher. In the case of the remaining grades, gasolines of 65 octane rating or higher are quoted one-half cent higher than the quotations shown in above tables.

Unless otherwise provided by agreement of buyers and sellers, the Series 30 testing equipment of the Ethyl Gasoline Corp. is recognized as standard in determining octane ratings.

*Present distillation specifications on U. S. Motor gasoline are: 10 per cent evaporated, 167° F. maximum; 50 per cent, 284° F. maximum; 90 per cent, 392° F. maximum; residue not exceeding 2 per cent; maximum vapor pressure, 12 pounds. Additional specification on U. S. Motor gasoline available from bulletins of Bureau of Mines, Washington, D. C.

†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
U. S. Motor	.06½	.06¾	.06½	.06¾
60-62 400	.06⅝	.06¾	.06⅝	.06¾
64-66 375	.06¾	.06⅞	.06¾	.06⅞
68-70 350	.06⅞	.07	.06⅞	.07

Octane Ratings—In the case of U. S. Motor and 60-62 400 endpoint grades, same price differentials based on octane ratings as shown in above tables for Oklahoma and other Mid-Continent areas.

CALIFORNIA (domestic movement only)—				
54-58 U. S. Motor	.04¾	.05½	.05	.05¾
58-60 400	.06	.06½	.06	.06½
EAST COAST—				
U. S. Motor, below 65 octane:				
New York (Bayonne)	.06½	.06¾	.06½	.06¾
Boston	.07	.07¼	.07	.07¼
Baltimore, Md.	.06¾	.07	.06¾	.07
Charleston, S. C.	.06¾		.06¾	
U. S. Motor, 65 octane and above:				
New York (Bayonne)	.07	.07¼	.07	.07¼
Boston	.07¼		.07¼	
Baltimore, Md.	.07	.07¼	.07	.07¼
Charleston, S. C.	.07	.07¼	.07	.07¼
GULF COAST (domestic)—				
U. S. Motor, 65 octane and above	.05½	.05¾	.05¼	.05¾
U. S. Motor, below 65 octane number	.05¼	.05½	.05¼	.05½

NAPHTHAS

OKLAHOMA (Group 3)—	May 24		May 17	
50-52 450 (blending)	.04¼	.04½	.04¼	.04½
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.06	.06¼	.05¾	.06
ARKANSAS—				
48-50 450 (blending)	.04¾	.05	.04¾	.05
CHICAGO Based on Okla. (Group 3)—				
50-52 450 (blending)	.04½	.04¾	.04⅜	.04⅝
Cleaners' naphtha, 56-58 gr. 200 i.b.p.-320 e.p.	.06¼	.06½	.06¾	
Lacquer diluent, 180 i.b.p.-250 e.p.	.08	.08½	.09	
Lacquer diluent, 140 i.b.p.-200 e.p.	.08½	.08¾	.09	
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.06	.06½	.06½	.07½
Stoddard solvent, 300 i.b.p.-410 e.p. over 100° flash	.05½	.05¾	.06	.06¾
Pet. thinner, 290, 300 i.b.p.-415 e.p., over 83° flash	.04¾	.05¼	.04¾	.05½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.05¼	.06	.05¼	.06½
Petroleum spirits	.03⅞	.05	.03⅞	.05

NATURAL GASOLINES

OKLAHOMA (Group 3)—	May 24		May 17	
Grade 18-55	.02¾	.02½	.02¼	.02½
Grade 26-70	.01⅞	.02	.01⅞	.02
Grade 30-70	.01¾		.01¾	
NORTH TEXAS—				
Grade 18-55	.02⅜		.02¼	.02⅜
Grade 26-70	.01⅞		.01⅞	
Grade 30-70	.01¾		.01¾	
NORTH LOUISIANA—				
Grade 26-70	.02¼		.02¼	
CALIFORNIA—				
75-78 375	.04½	.05	.04½	.05

Note—Grades 18-55, 26-70 and 30-70 are three of 24 grades adopted by the Natural Gasoline Association of American effective January 1. The grades are based on pounds vapor pressure and amount evaporated at 140° F. While not exactly the same specifications apply, Grade 18-55 corresponds to the former Grade A, Grade 26-70 to former Grade AA and Grade 30-70 to former Grade BB.

KEROSENES

(All kerosenes water white)

OKLAHOMA (Group 3)—	May 24		May 17	
41-43	.03¾	.04¼	.04	.04¼
42-44	.04	.04⅜	.04⅛	.04⅜
NORTH TEXAS—				
40-41	.03¾	.04	.03⅞	.04
41-43	.03⅞	.04⅛	.04	.04⅛
†NORTH LOUISIANA—				
41-43	.04¼		.04½	.04¾
42-44	.04½		.04¾	.05
†ARKANSAS—				
41-43	.04¼		.04½	
PENNSYLVANIA (inland refineries)—				
45	.05	.05⅛	.05	.05⅛
46	.05	.05¼	.05	.05⅛
47	.05¼	.05½	.05¼	.05½
CHICAGO (Based on Group 3)—				
41-43	.03¾	.04	.04	.04¼
42-44	.03⅞	.04⅛	.04⅛	.04⅜
***CALIFORNIA—**				
38-40 high burning test	.04	.04¾	.04	.04¾
NEW YORK (Bayonne, N. J.)—				
41-43	.05½	.06	.05½	.06
GULF COAST (domestic)—				
41-43 water white	.04¼	.04½	.04¼	.04½

*For Pacific Coast consumption.

†For Arkansas, Louisiana and Mississippi delivery.

TRACTOR FUELS*

OKLAHOMA (Group 3)—	May 24		May 17	
39-40 prime white	.02¾	.02½	.02¾	.02½
38-40 light straw	.02⅛	.02¼	.02⅛	.02¼
NORTH TEXAS—				
38-40 light straw	.02⅛	.02¼	.02⅛	.02¼
CHICAGO (Based on Group 3)—				
38-40 light straw	.02⅛	.02⅜	.02¼	.02½
PENNSYLVANIA (inland refineries)—				
41-43 prime white	.04	.04¼	.04	.04¼

*There are no standard specifications for tractor fuels. Grades commonly sold have flash under 175° F. (open cup) and under 575° F. endpoint and less than .2 per cent sulphur. Tractor fuels are available from all Mid-Continent refining groups at prices in line with the Oklahoma market taking into consideration differentials in freight rates.

FURNACE OILS*

OKLAHOMA (Group 3)—	May 24		May 17	
32-36 straw	.01¾	.01⅞	.01¾	.01⅞
36-38 straw	.01¾	.02	.01⅞	.02
38-40 straw	.01⅞	.02¼	.02	.02¼
39-41 prime white	.02¼	.02½	.02⅜	.02½
NORTH TEXAS—				
38-40 straw	.02	.02⅛	.02	.02⅛
†NORTH LOUISIANA—				
36-40	.02⅜	.02½	.02½	.02⅝
†ARKANSAS—				
32-36	.02⅜	.02½	.02½	.02⅝
CHICAGO (Based on Group 3)—				
32-36 straw	.01¾	.01⅞	.01⅞	.02
38-40 straw	.02	.02⅛	.02⅛	.02¼
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.03½	.03¾	.03¾	.04
NEW YORK (Bayonne, N. J.)—				
32-36	.04	.04½	.04	.04½
36-40	.05	.05½	.05	.05½

*Above prices are for furnace oils of zero cold test, under 190° F. flash and good odor.

†For Arkansas, Louisiana and Mississippi delivery.

GAS OIL, DIESEL OIL AND FUEL OIL

Gas oil (G.O.) quoted per gallon basis; Diesel oil and fuel oil per barrel.

OKLAHOMA (Group 3)—	May 24		May 17	
32-36 (G.O.) cracking stock	.01⅝	.01½	.01⅝	.01½
U.G.I. (G.O.)	.01¼	.01⅝	.01⅝	
32-36, zero to 15 (G.O.) high flash	.01⅜	.01½	.01⅜	.01½
28-30, zero to 10	.50	.55	.52½	.55
26-30, zero to 10	.50		.50	.55
24-26	.42½	.45	.42½	.45
20-22	.40	.45	.40	.45
16-20	.35	.40	.35	.40
Below 16	.32½	.35	.32½	.35
NORTH TEXAS—				
32-36 (G.O.) industrial	.01¼	.01⅜	.01¼	.01⅜
22-26	.45	.50	.45	.50
Below 20	.35	.45	.35	.45
†NORTH LOUISIANA—				
32-36 (G.O.) zero	.02¼	.02½	.02¼	.02½
14-16	.35	.45	.35	.45
†ARKANSAS—				
32-36 (G.O.) zero	.02¼	.02½	.02¼	.02½
14-16	.35	.45	.35	.45
CHICAGO (Based on Group 3)—				
32-36 (G.O.) industrial	.01¼	.01⅜	.01¼	.01⅜
28-30 (zero)	.55	.60	.55	.60
22-26	.35	.40	.40	
18-22	.30	.35	.32½	.37½
Below 18	.25	.30	.25	.30
PENNSYLVANIA (inland refineries)—				
36-40	.03¼	.03½	.03¼	.03½

Note—Fuel oils of more than 40 cold test generally 5 to 10 cents per barrel less in all areas than shown in above tables.

†For Arkansas, Louisiana and Mississippi delivery.

CALIFORNIA—				
30-34 (G.O.) per bbl.	.65	.90	.70	.95
27 plus Diesel	.75	.90	.70	.90
15-19 Bunker (at tidewater)	.55	.75	.55	.75
15-19 Bunker (cargo lots)	.50	.65	.50	.65
15-19 (tank cars)	.45	.70	.45	.70
GULF COAST—				
28-30 (G.O.)	.03	.03⅛	.03	.03⅛
28-30 Diesel	1.35		1.20	
Bunker C (bulk cargoes)	.50	.55	.48	.50
Bunker C (bunkers)	.60		.55	.60
NEW YORK (Bayonne, N. J.)—				
28 plus (G.O.)	.04		.04	
*28-30 Diesel	1.40		1.40	
†Bunker C	.75		.75	

*Lighterage 6½ cents per barrel.

†Lighterage 5 cents per barrel.

PETROLEUM COKE*

Prices per ton f.o.b. refineries in Chicago area.

	May 24		May 17	
Breeze (screenings)	3.50	3.75	3.50	3.75
Still runs	4.50	4.75	4.50	4.75
Lump and egg	5.00	5.50	5.00	5.50

*Refiners will absorb freight up to 80 cents a ton.

NEUTRAL OILS

(Viscosity at 100° F. and Color)

OKLAHOMA (Group 3)—	May 24		May 17	
Zero to 10 Cold Test:				
150-3	.06¼	.06½	.06¼	.06½
180-3	.07½	.07¾	.07½	.07¾
180-4	.07	.07¼	.07	.07¼
200-3	.08¼	.08½	.08¼	.08½
200-4	.08	.08¼	.08	.08¼
240-3	.09¾	.10	.00¾	.10
240-4	.09	.09½	.09	.09½
280-3	.11¼	.11½	.11¼	.11½
280-4	.10½	.10½	.10¼	.10½
300-3.5	.11¾	.12	.11¾	.12
350-3.5	.12¼	.12½	.12¼	.12½
400-4	.12¾	.13	.12¾	.13
500-4.5	.13¼	.13½	.13¼	.13½
100-2 Paraffin Oil	.04¼	.04½	.04¼	.04½
15-30 Cold Test:				
200-3	.07¾	.08	.07¾	.08
200-4	.07½	.07¾	.07½	.07¾
240-3	.09½	.09½	.09¼	.09½
240-4	.08¾	.09	.08¾	.09
280-3	.10¾	.11	.10¾	.11
280-4	.09¾	.10	.09¾	.10
PENNSYLVANIA—				
150 vis., No. 3, 400-405:				
Zero pour test	.15	.16	.15	.16
10 pour test	.14	.15	.14	.15
15 pour test	.13½	.14½	.13½	.14½
25 pour test	.12¾	.13¼	.12¾	.13¼
30 pour test	.12¾	.13	.12¾	.13
180 vis., No. 3, 25 pour test	.15¾	.16½	.15¾	.16½
200 vis., No. 3:				
Zero pour test	.22	.23½	.22	.23½
10 pour test	.21	.22	.21	.22
15 pour test	.19½	.20	.19½	.20
25 pour test	.18	.18½	.18	.18½
30 pour test	.17¾	.18	.17¾	.18
GULF COAST—				
Pale Oils:				
100-2-2½	.05		.05	
200-3	.06½		.06½	
300-3	.07		.07	
500-3½	.08	.08½	.08	.08½
750-3½	.09	.09½	.09	.09½
1,200-3½	.10½	.11	.10½	.11
2,000-4	.12	.12½	.12	.12½
Red Oils:				
200-5-6	.05	.05½	.05	.05½
300-5-6	.05½	.06	.05½	.06
500-5-6	.06¾	.07	.06¾	.07
1,200-5-6	.09½	.10	.09½	.10
2,000-6 plus	.11	.11½	.11	.11½

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

CALIFORNIA—

Pale Oils:				
100-21½-3	.07¾	.08	.07¾	.08
200-21½-3	.07¾	.08	.07¾	.08
300-3-31½	.08¼	.08½	.08¼	.08½
350-3-4	.08¾	.09	.08¾	.09
400-3-4	.09¼	.09¾	.09¼	.09¾
450-3-4	.09¾	.10	.09¾	.10
550-3-4	.10¼	.11	.10¼	.11
Red Oils:				
200-4½-5	.07	.07¼	.07¾	.08¼
300-5-6	.07½	.07¾	.08¼	.08¾
350-5-6	.07¾	.08	.09	.09¼
400-5-6	.08		.09½	.09¾
450-5-6	.08	.08¼	.10	.10¼
500-5-6	.08¼	.08½	.10½	.11
600-5-6½	.08¾	.09	.11½	.12
700-6½ plus	.09		.12½	.12¾
750-6½ plus	.09	.09½	.13	.13½
900-6½ plus	.13½	.14	.14½	.14¾

NEW YORK (Bayonne, N. J.) —

Paraffin Oil:				
25 pale	.10¼		.10¼	
28 pale	.07¼		.07¼	
280 red	.12½		.12½	
250 red	.11½		.11½	
225 red	.10		.10	
200 red	.09¼		.09¼	

BRIGHT STOCKS AND STEAM REFINED STOCKS

OKLAHOMA (Group 3)—	May 24		May 17	
600 light green S.R.	.05	.06	.05	.06
600 dark green S.R.	.04	.04½	.04	.04½
Bright Stock:				
190-200 D	.22	.23	.22	
150-160 D, 0-10	.20¾	.21	.20¾	.21
150-160 D, 10-25	.20¼	.20½	.20¼	.20½
150-160 D, 25-40	.19¾	.20	.19¾	.20
150-160 E	.20		.20	
PENNSYLVANIA—				
600 S.R.	.14	.14½	.14	.14½
650 S.R.	.16½	.17	.16½	.17
600 Pennsylvania flash	.17½	.18	.17½	.18
600 D filtered	.22½	.23	.22½	.23
600 E filtered	.17	.17½	.17	.17½
Pennsylvania Grade bright stock:				
Bright Stock, No. 8 color, 145-50 vis., 210-540-550 flash:				
10 pour test	.27½	.28½	.27½	.28½
15 pour test	.25	.26	.25	.26
25 pour test	.24	.24½	.24	.24½
35 pour test	.23½	.24	.23½	.24

WAX AND PETROLATUM

(Prices per pound)

OKLAHOMA (Group 3)—	May 24		May 17	
124-126 white crude scale	.01⅝	.01¾	.01¾	.02
PENNSYLVANIA—				
122-124	.02		.02	
124-126	.02¼		.02¼	
NEW YORK (Bayonne, N. J.)—				
Refined Wax:				
120-122	.02⅜		.02¾	
125-127	.02⅛		.02⅛	
130-132	.03⅛		.03⅛	
133-135	.04		.04	
135-137	.04⅛		.04⅛	
Petrolatum in barrels in carload lots:				
Dark Green	.01¾		.01¾	
Amber	.02⅛		.02⅛	
Extra amber	.02⅝		.02⅝	
Cream	.04⅝		.04⅝	
Lily white	.05⅝		.05⅝	
Snow white	.06⅝		.06⅝	

EXPORT PRICES

GASOLINE

GULF COAST—	May 24		May 17	
U. S. Motor	.05	.05¼	.05	.05¼
60-62 400	.05	.05½	.05	.05½
61-63 390	.05½	.05⅝	.05½	.05⅝
64-66 375	.05½	.05¾	.05½	.05¾
LOS ANGELES, CALIF.—				
U. S. Motor, 53-55 437 e.p..	.03¾	.04¼	.03¾	.04¼
U. S. Motor, 65 octane num.	.05		.05	
U. S. Motor, 67 octane num.	.05¼		.05¼	
U. S. Motor, 69 octane num.	.05½		.05½	
58-62 400 endpoint gasoline.	.04¼	.05	.04¼	.05

KEROSENE

GULF COAST—				
41-43 prime white	.04⅜		.04⅜	
41 water white	.04½		.04½	
LOS ANGELES, CALIF.—				
41-43 water white	.03¾	.04¾	.03¾	.04¾

LUBRICANTS

NEW YORK (Bayonne, N. J.)—				
600, steam refined cylinder stocks, in bbls.	.21	.22	.21	.22
650, steam refined	.24	.25	.24	.25
600, Pennsylvania flash	.24	.25	.24	.25
630, Pennsylvania flash	.30	.31	.30	.31
600, Warren E	.24	.25	.24	.25
600, Oil City E	.23	.24	.23	.24
Light 140-150 Bright Stocks	.30½	.31	.30½	.31
Dark 140-150 Bright Stocks	.29	.30	.29	.30

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

East Texas (Apr. 1, 1932)† ..... $ .98
East Texas (April 11, 1932)‡ ..... .98
Corsicana heavy* ..... .64
Other fields ..... See gravity table

†Posted by Magnolia Petroleum Co., Sinclair Refining Co., Panola Pipe Line Co., Tidal Refining Co. and The Texas Company. ‡Gulf Pipe Line Co. and Atlas Pipe Line Co. *Magnolia Petroleum Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective April 25, 1932)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field) (Mar. 14, 1933) $2.02
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.75
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia) (Feb. 26, 1932) 1.70
Penna Grade Oil in Buckeye Pipe Line Lines (Mar. 13, 1932) 1.55
Corning Grade Oil in Buckeye Pipe Line Co.'s line (April 26, 1932) 1.05
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 16, 1931) ... .60

Pennzoil Co.
(Effective April 25, 1932)

Pennsylvania Grade Oil in National Transit Lines:
Group A $1.97
Includes Cochran, Franklin, Hamilton and Doolittle districts.
Group B 1.96
Includes Titusville district.
Group C 1.95
Includes Turkey and Tidiout districts.
Group D 1.94
Includes Bear Creek and Porkey districts.
Group E 1.93
Includes Eidenau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts.
Price depends on length of pipe line haul to plant at Oil City.

Tide Water Pipe Co.
(Effective April 25, 1932)

Bradford, Pa. $2.02
Allegany, N. Y. 2.02

Pure Oil Co.
(Effective April 25, 1932)

Cabin Creek, W. Va. $1.70
Bradford Hollow, W. Va. 1.70
Kelly's Creek, W. Va. 1.70

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties ..... See gravity table

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

Iles, light (Aug. 24, 1931) ..... $ .75
Iles, heavy (Aug. 24, 1931) ..... .53
Fort Collins (April 11, 1932) ..... .86
Florence (April 11, 1932) ..... .80
Wellington (April 11, 1932) ..... .76
Greasewood Dome, Colo. (Apr. 11, 1932) 1.00
Dutton Creek (April 11, 1932) ..... .82
Rock Creek, Wyo. (April 11, 1932) 1.00
Frannie, light (Nov. 2, 1931) ..... .61
Frannie, heavy (Nov. 2, 1931) ..... .51
Salt Creek ..... Mid-Continent gravity table
LaBarge ..... Mid-Continent gravity scale
Big Muddy (April 11, 1932) ..... .98
Grass Creek (April 11, 1932) 1.20
Elk Basin (April 11, 1932) 1.20
Lance Creek (April 11, 1932) 1.15
Poison Spider (Mar. 5, 1931) ..... .70
Notches (Mar. 14, 1927) ..... .65
Hudson (June 3, 1931) ..... .65
Lander (Mar. 5, 1931) ..... .40
Rex Lake (Feb. 22, 1930) 1.10
Osage (Apr. 15, 1931) ..... .93
Lost Soldier (April 12, 1932) ..... .80
Hamilton Dome (Nov. 3, 1931) ..... .45
Greybull (April 11, 1932) 1.20
Cat Creek (April 11, 1932) 1.20
Pondera (Nov. 3, 1931) ..... .90
Sunburst, Mont. (April 11, 1932) 1.05
Hogback, N. Mex. (Aug. 24, 1931) .... .80
Border, Mont. 1.55
Red Coulee, Alberta 1.55
Lea County, N. Mex. (Apr. 1, 1932)* .. .65
Maljamar (April 11, 1932) ..... .60
Artesia-Jackson (April 11, 1932) ..... .65

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull, Hogback and Iles by Midwest Refining Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro Oil & Refining Co.

*Posted by The Texas Company. Humble Oil & Refining Co. met this price effective April 11.

WEST TEXAS

Iatan and Westbrook .. Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Mitchell, Ector, Winkler and Pecos Counties* ..... $ .65
Lea County, N. Mex. (See Rocky Mountain States).
Toboro, Pecos County (April 11, 1932)† .55

*Effective April 1, 1932, Magnolia Petroleum Co., The Texas Company. Effective April 11, Humble Oil & Refining Co. and Gulf Pipe Line Co. and Stanolind Oil & Gas Co. in Winkler County. †Shell Petroleum Corp.

GULF COAST

Grade A and Grade B classifications discontinued by leading buyers. ..... See gravity table
Jennings, La. (April 11, 1932)* ..... $ .75
Lockport, La. ..... See Gulf Coast gravity table
Refugio, light ..... See gravity table
Refugio, heavy (April 11, 1932)‡ ..... .80
Markham (April 11, 1932)§ ..... See Gulf Coast gravity schedule
High Island (April 11, 1932)† ..... See Gulf Coast gravity schedule

*Gulf Refining Co. †Magnolia Petroleum Co. ‡Humble Oil & Refining Co. §The Texas Company. ¶Yount Lee Pipe Line Co.

NORTH LOUISIANA AND ARKANSAS

Smackover, Ark. (al. grades) ..... $ .65
Urania, La. (April 12, 1932) ..... .60
East El Dorado, Ark. (April 6, 1932) .. .65
Stephens, Ark., below 29° (April 12, 1932) ..... .61
Stephens, Ark., 29° and above (April 12, 1932) ..... .84
Other fields ..... See gravity table

Note—Smackover, all grades, The Texas Company, April 1, 1932; Magnolia Petroleum Co., April 6, 1932; Standard Oil Co. of Loui-

(Continued on Next Page)

CRUDE OIL GRAVITY TABLE

	Kansas and Oklahoma	North and Central Texas	East Central Texas	Gray County, Texas	Carson and Hutchinson Counties, Texas	Salt Creek and LaBarge, Wyoming	North Louisiana and Arkansas	Gulf Coast (Texas-Louisiana)	Cameron Meadows, Louisiana	Iowa and Lockport, Louisiana
	1	2	3	4	5	6	7	8	9	10
Below 25 degrees	....	....	$.67	....	....	....	$.68	$.80	$.70	$.80
25-25.9 degrees	....	....	.67	....	....	....	.70	.81	.71	.81
26-26.9 degrees	....	....	.67	....	....	....	.72	.82	.72	.82
27-27.9 degrees	....	....	.67	....	....	....	.74	.83	.73	.83
28-28.9 degrees	....	....	.76	....	....	....	.76	.84	.74	.84
Below 29 degrees	$.76	$.76	....	....	....	$.76	....	....	....	....
29-29.9 degrees	.78	.78	.78	....	....	.78	.78	.85	.75	.85
30-30.9 degrees	.80	.80	.80	....	....	.80	.80	.86	.76	.86
31-31.9 degrees	.82	.82	.82	....	....	.82	.82	.87	.77	.87
32-32.9 degrees	.84	.84	.84	....	....	.84	.84	.88	.78	.88
33-33.9 degrees	.86	.86	.86	....	....	.86	.86	.89	.79	.89
34-34.9 degrees	.88	.88	.88	$.76	$.66	.88	.88	.90	.80	.90
35-35.9 degrees	.90	.90	.90	.78	.68	.90	.90	.91	.81	.91
36-36.9 degrees	.92	.92	.92	.80	.70	.92	.92	.92	.83	.92
37-37.9 degrees	.94	.94	.94	.82	.72	.94	.94	.94	.84	.94
38-38.9 degrees	.96	.96	.96	.84	.74	.94	.96	.96	.86	.96
39-39.9 degrees	.98	.98	.98	.86	.76	.94	.98	.98	.88	.98
40 degrees and over.	1.00	1.00	1.00	.88	.78	.94	1.00	1.00	.90	1.00

Note—Magnolia Petroleum Co.'s prices in Oklahoma, North Texas and Central Texas, effective April 1, are the same as above given in Columns 1 and 2, excepting that the schedule begins with below 28 degrees, 67 cents; 28-28.9 degrees, 76 cents. The Empire Pipe Line Co. met the Magnolia prices in Kansas and Oklahoma; the White Eagle Oil Corp. in Kansas and the Pure Oil Co., in Oklahoma.

Column 1—Effective April 1, 1932, Continental Oil Co. in Oklahoma and Kansas; Barnsdall Refineries, Inc., and Standish Oil Co. (Phillips Petroleum Co.), in Oklahoma and Kansas; Skelly Oil Co., Kanotex Refining Co., Derby Oil Co., Vickers Petroleum Co., in Kansas; Magnolia Petroleum Co. and Pure Oil Co., in Oklahoma (see note above); White Eagle Oil Corp., in Kansas (see note above); The Texas Company in Oklahoma. Effective April 11, 1932, Stanolind Crude Oil Purchasing Co. in Oklahoma and Kansas; Gypsy Oil Co., Mid-Continent Petroleum Corp., Champlin Refining Co., Eason Oil Co., Pepper Gasoline Co. and Carter Oil Co. in Oklahoma. Carter Oil Co.'s schedule begins at below 25 degrees, 68 cents, with 2 cents added for each degree upward.

Column 2—Continental Oil Co., effective April 1, in North Texas only; followed on same day by The Texas Company in North and Central Texas; Magnolia Petroleum Co. in North and Central Texas (see note above); effective April 11, the Humble Oil & Refining Co., Gulf Pipe Line Co. and Stanolind Crude Oil Purchasing Co.

Column 3—Effective April 1, 1932, the Magnolia Petroleum Co.; effective April 11, 1932, Humble Oil & Refining Co.

Column 4—Effective April 1, 1932, Magnolia Petroleum Co.; effective April 2, the Philtex Oil Co. (Phillips Petroleum Co.), but its schedule was carried down to below 30 degrees at 66 cents, with 2 cents added for each degree upward. Effective April 11, other companies met Continental schedule.

Column 5—Effective April 1, 1932, Magnolia Petroleum Co.; effective April 2, Philtex Oil Co., excepting that latter company carried its schedule down to below 30 degrees at 56 cents, with 2 cents added for each degree upward. Effective April 11, Continental Oil Co. and Gulf Pipe Line Co. met Magnolia Petroleum Co. prices.

Column 6—Midwest Refining Co., effective April 11, 1932.

Column 7—The Texas Company, effective April 1, 1932; Magnolia Petroleum Co., effective April 6, 1932; Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Stanolind Oil & Gas Co. (in Pine Island and Pleasant Hill and in Marion County, Texas) and Gulf Refining Co., effective April 11, 1932.

Column 8—The Texas Company, effective April 1, 1932; Sun Oil Co., April 1, 1932; Humble Oil & Refining Co., effective April 11, 1932; Gulf Pipe Line Co., effective April 11, 1932. Gulf's gravity scale ends with a top of 35 and above at 91 cents.

Column 9—Magnolia Petroleum Co., effective April 6, 1932.

Column 10—Magnolia Petroleum Co., effective April 6, 1932.

(California Crude Oil Prices on Page 40)

TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns May 24.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago	16.0	16.0	3.0	10.0
Decatur, Ill.	16.5	16.5	3.0	10.1
E. St. Louis	15.8	15.8	3.0	9.3
Joliet	16.5	16.5	3.0	10.1
Peoria	16.5	16.5	3.0	10.1
Quincy	16.3	16.3	3.0	9.9
Davenport, Ia.	16.6	16.6	3.0	10.4
Des Moines	16.6	16.6	3.0	10.4
Keokuk	16.6	16.6	3.0	10.4
Sioux City	16.3	16.3	3.0	10.0
Duluth, Minn.	17.6	17.6	3.0	11.0
Mankato	17.2	17.2	3.0	9.7
Minneapolis	17.3	17.3	3.0	11.0
LaCrosse, Wis.	18.3	18.3	4.0	11.1
Milwaukee	17.2	17.2	4.0	10.0
Madison	17.4	17.4	4.0	10.2
Detroit, Mich.	13.5	13.5	3.0	10.5
Grand Rapids	16.6	16.6	3.0	10.5
Saginaw	15.5	15.5	3.0	10.8
Evansville, Ind.	17.3	17.3	4.0	10.1
Indianapolis	17.3	17.3	4.0	10.1
South Bend	17.8	17.8	4.0	10.6
Fargo, N. D.	19.0	19.0	3.0	13.0
Huron, S. D.	18.4	18.4	4.0	11.5
Sioux Falls	17.9	17.9	4.0	11.5
K. C., Mo.	16.0	16.0	3.0	8.7
Springfield*	16.0	16.0	3.0	9.6
St. Louis*	15.5	15.5	3.0	9.4
St. Joseph	15.6	15.6	3.0	9.2
Wichita, Kans.	14.9	14.9	3.0	8.9
Bartlesville, Ok.	14.1	17.0	4.0	8.1

*State tax 2 cents, remainder city tax.

A third grade of gasoline, "Stanolind Blue," is sold at all major points at a price 1¼ cents or more below the price on the regular grade.

Effective November 4—New dump discount applicable on all grades of gasoline sold from tank wagon. Any tank wagon customer buying 25 gallons or more at one time will be given 1-cent discount per gallon off tank wagon price at time of delivery. Customers not under contract receive no other discount.

Effective January 1—Discounts on Q.D.A. on 500 gallons or more per month throughout territory; Red Crown Ethyl Gasoline, 2 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price. On deliveries of 75,000 gallons or more each classification allowed 1 cent additional discount.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	17.0	18.0	4.0	10.0
Fort Worth	17.0	18.0	4.0	9.0
Houston	16.0	19.0	4.0	10.0
San Antonio	16.0	18.0	4.0	9.0
El Paso	16.0	18.0	4.0	12.0
Texarkana	*15.5	18.5	4.0	†11.0
Muskogee, Ok.	15.0	17.0	4.0	9.0
Okla. City	15.0	17.0	4.0	9.0
Tulsa	15.0	17.0	4.0	9.0
Ft. Smith, Ark.	*15.5	18.5	6.0	†11.0
Little Rock	*19.5	*19.5	6.0	†11.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

*Less 2½ cents to dealers. †Less 2 cents to dealers.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	16.0	17.0	3.0	11.0
Philadelphia	15.0	16.0	3.0	11.0
Scranton	16.0	17.0	3.0	11.0
Allentown	16.0	17.0	3.0	11.0
Altoona	16.0	17.0	3.0	11.0
Erie	16.0	17.0	3.0	11.0
Dover, Del.	16.0	17.0	3.0	11.0
Wilmington	16.0	17.0	3.0	11.0
Springf'd, Mass.	16.5	17.5	3.0	9.0
Worcester	16.3	17.3	3.0	9.0
Boston	15.5	16.5	3.0	9.0
Providence, R.I.	14.5	15.5	2.0	9.0
Hartford, Conn.	15.5	16.5	2.0	9.0
New Haven	15.6	16.6	2.0	9.0

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points	17.5	18.0	4.0	*12.0

Dealers and commercial accounts 2 cents under tank wagon.

*Service station price 13 cents.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	17.0	20.0	4.0	13.5
Pueblo	17.0	20.0	4.0	13.0
Grand Jctn	19.0	22.0	4.0	16.5
Casper, Wyo.	16.0	19.0	4.0	11.0
Cheyenne	15.0	18.0	4.0	12.5
Butte, Mont.	22.0	25.0	5.0	17.0
Billings	22.0	25.0	5.0	15.5
Great Falls	21.0	24.0	5.0	17.0
Helena	21.0	24.0	5.0	17.0
Salt Lake, Utah	18.5	21.5	4.0	16.0
Albu'que, N. M.	17.0	20.0	6.0	14.0
Boise, Idaho	†18.0	20.0	5.0	18.0
Twin Falls	19.0	22.0	5.0	18.0

*Two-cent discount off tank wagon to dealers.

†One-cent discount to dealers at time of delivery.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.*	22.0	22.0	6.0	11.0
Augusta	22.0	22.0	6.0	14.5
Macon	22.0	22.0	6.0	13.0
Savannah	22.0	22.0	6.0	13.5
Birm'ham, Ala.	21.5	21.5	6.0	13.0
Mobile	22.0	22.0	6.0	16.0
Montgomery	23.0	23.0	6.0	14.5
Jackson, Miss.	19.5	19.5	5.0	11.5
Vicksburg	19.5	19.5	5.0	9.5
Jack'ville, Fla.	19.0	19.0	7.0	10.5
Miami	22.0	22.0	7.0	13.5
Pensacola	20.0	20.0	7.0	13.5
Tampa	21.0	21.0	7.0	9.5
Lexington, Ky.	18.5	19.5	5.0	10.5
Covington	18.5	19.5	5.0	10.5
Louisville	17.5	18.5	5.0	10.5
Paducah	18.5	19.5	5.0	8.5

A third grade "Kyso Green" is sold at a price generally 2 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent tax. To Mobile state tax add 1-cent city tax and 2½ cents county tax.

Effective April 2 price to dealers 2 cents under posted tank wagon price.

*An additional discount of 1 cent is offered to dealers effective October 6.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atl'tic City, N.J.	16.4	16.9	3.0	11.2
Newark	15.7	16.2	3.0	8.5
Annapolis, Md.	17.0	17.5	4.0	10.0
Baltimore	16.4	16.9	4.0	7.0
Cumberland	17.9	18.4	4.0	11.7
Wash'g'n, D. C.	14.9	15.4	2.0	10.0
Danville, Va.	19.1	19.6	5.0	11.9
Norfolk	17.5	18.0	5.0	10.3
Petersburg	18.6	19.1	5.0	11.4
Richmond	17.9	18.4	5.0	10.7
Roanoke	19.1	19.6	5.0	11.9
Charles'n, W.Va.	17.8	18.3	4.0	11.6
Parkersburg	16.4	16.9	4.0	10.2
Wheeling	17.4	17.9	4.0	11.2
Charlotte, N. C.	20.7	21.2	6.0	12.5
Hickory	20.9	21.4	6.0	12.7
Mt. Airy	21.0	21.5	6.0	12.8
Raleigh	20.5	21.0	6.0	12.3
Salisbury	20.9	21.3	6.0	12.6
Charleston, S. C.	18.5	19.0	6.0	10.2
Columbia	20.4	20.9	6.0	12.2
Spartanburg	20.7	21.2	6.0	12.5

Two and one-half cents per gallon discount off tank wagon price of gasoline to dealers except Washington, D. C., and States of Maryland and New Jersey, where discount is 2½ cents.

Prices shown above are for standard gasoline.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	10.7	6.25
V.M.P. naphtha	12.7	7.23
Cleaners' naphtha	15.2	9.23
Stanisol	15.2	9.23

Tank wagon prices f.o.b. Chicago January 6, 1932. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	15.5	16.5	3.0	10.0
New York*	12.5	12.5	3.0	9.5
Buffalo	16.5	17.5	3.0*	9.0
Rochester	16.5	17.5	3.0	9.0
Syracuse	17.3	18.3	3.0	9.5
Boston, Mass.	15.0	16.0	3.0	9.0
Augusta, Me.	17.3	18.3	4.0	9.5
Manch'tr, N. H.	16.9	17.9	4.0	9.0
Burlington, Vt.	17.8	18.8	4.0	10.0

*Prices in steel barrels.

PACIFIC COAST TERRITORY

Standard Oil Co. of California*

	Gasoline			Kero.
	Tank truck†	Posted retail	Incl'ds tax of	tank wagon
Fresno	16.5	14.5	3.0	17.0
San Francisco	16.5	14.5	3.0	15.5
Los Angeles	16.0	14.0	3.0	15.5
Reno, Nev.	20.0	20.0	4.0	19.0
Portland, Ore.	16.0	15.0	4.0	16.5
Seattle, Wash.	17.0	16.0	5.0	16.5
Tacoma	17.0	16.0	5.0	16.5
Spokane	22.5	20.0	5.0	20.5
Phoenix, Ariz.	14.5	17.0	5.0	20.0

†Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.	19.5	19.5	6.0	†12.0
Baton Rouge	18.5	18.5	5.0	†12.0
Alexandria	19.5	19.5	6.0	10.0
Lafayette*	19.5	19.5	6.0	†10.0
Lake Charles*	19.5	19.5	6.0	†12.0
Shreveport	18.5	18.5	5.0	†12.0
Knoxville, Tenn.	22.5	22.5	7.0	13.5
Memphis	21.0	21.0	7.0	11.0
Chattanooga	22.5	22.5	7.0	13.5
Nashville	22.0	22.0	7.0	13.0
Bristol	21.0	21.0	7.0	14.0
Lt. Rock, Ark.	19.5	19.5	6.0	11.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Kerosene prices in Louisiana include 1-cent tax except New Orleans where tax is 2 cents.

Two-cent discount off gasoline and kerosene tank wagon price to dealer and commercial accounts.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	16.9	16.9	4.0	10.25
McCook	17.0	17.0	4.0	11.75
Norfolk	17.75	18.75	4.0	10.75
N. Platte	18.0	18.0	4.0	11.5
Scottsbluff	17.0	17.0	4.0	11.25

Note—Dealers' discount allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off normal service station price; Nebraska Blue (third grade), 1 cent off normal service station price.

STANOLIND FURNACE OIL IN CHICAGO

Effective July 1, prices f.o.b. Chicago, tank wagon prices: 1 to 99 gallons, 8 cents; 100 gallons or more, 6 cents.

Stanolec Fuel

Effective May 9, f.o.b. Chicago, tank wagon prices: 1 to 199 gallons, 7 cents; 200 gallons or more, 5 cents. Sinclair met this by bringing down the price of its No. 3.

Fuel Oils

Chicago tank wagon prices (in lots of 400 gallons and over): 38-40 straw distillate, 6 cents; 32-36 gas oil (light zero), 5.5 cents; 32-36 gas oil (industrial), 5.25 cents; 28-30 zero fuel oil, 5 cents; 24-26 fuel oil, 4.25 cents; 18-22 fuel oil, 3.75 cents.

TANK WAGON CHANGES

Standard Oil Co. of Indiana effective May 9 established gasoline service station price of 16.3 cents at Quincy, Ill.; effective May 14 same company established kerosene tank wagon price of 9.7 cents at Mankato, Minn.

Continental Oil Co. effective May 18 advanced gasoline tank wagon and service station prices 3 cents at Butte and Billings, Mont.

Standard Oil Co. of New York effective May 21 reduced gasoline service station price 4 cents and gasoline tank wagon price 2 cents in Greater New York City.

Standard Oil Co. of Louisiana effective May 17 advanced kerosene tank wagon prices one-half cent at Nashville, Tenn.; 2 cents at Memphis, Tenn., and 2½ cents at Chattanooga, Tenn.

OPPOSING STOCKHOLDER ASKS RECEIVERSHIP

CHICAGO, May 23.—A petition for equity receivership for the Consolidated Oil Corp. asking the dissolution of that $500,000,000 oil combination was filed in the Federal District Court here. The company recently was formed through the merger of the Sinclair Consolidated Oil Corp., the Prairie Oil & Gas Co. and the Prairie Pipe Line Co.

The bill was filed on behalf of William R. Carney of Chicago, a stockholder, who opposed the consolidation. It sets forth that the Bancamerica-Blair Corp., which controlled large blocks in both companies, effected the deal and received $700,000 in fees.

CRUDE OIL PRICES

(Continued from Preceding Page)

siana, Gulf Refining Co. and Louisiana Oil Refining Co., April 11, 1932. Urania posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co.; East El Dorado by Magnolia Petroleum Co., effective April 6, 1932; by Gulf Refining Co., effective April 11, 1932; Stephens, Ark., by Louisiana Oil Refining Co. and Atlantic Oil Producing Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Apr. 1, 1932)*	$ .75
Luling (Apr. 1, 1932)*	.64
Mirando (Apr. 1, 1932)*	.90
Pettus (Apr. 11, 1932)‡	1.00
Salt Flat (Apr. 11, 1932)‡	.75
Thrall§	
Lytton Springs (Lockhart) (Apr. 1, 1932)*	.94
Dobrowolski¶	
Same as Mid-Continent gravity scale up to and including 38-38.9°	
Somerset¶	
Same as Mid-Continent gravity scale up to and including 38-38.9°	

*Magnolia Petroleum Co., The Texas Company, Humble Oil & Refining Co. posted 80 cents for Mirando, April 11. §Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products. ‡Pioneer Oil & Refining Co. ‡Humble Oil & Refining Co.

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective April 11, 1932)

Lima	$1.15
Wooster	1.25
Illinois	1.10
Indiana	.75
Princeton	1.10
Plymouth	Shut in
Western Kentucky	1.05
Midland, Mich. (May 17, 1932)*	.65
Dundee, Mich.†	
Same as Stanolind Crude Oil Purchasing Co.'s Mid-Continent gravity scale Upper and Lower Traverse Sands, Mich.†	
....Same as Mid-Continent gravity scale	
Somerset, Ky. (Apr. 25, 1932)	.85
Hart County, Ky. (Apr. 16, 1932)§	.85

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment. §Posted by Stoll Refining Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and delivered through own pipe line.

MEXICO

Panuco*	$ .47

*F.o.b. ship, based on April transactions and exclusive of production and export taxes and bar dues.

CANADA

Ontario (Nov. 3, 1931):	
Petrolia*	$1.90
Oil Springs*	1.97
Alberta (Apr. 22, 1932):	
Turner Valley†:	
Crude oil 40-44.9	1.56
Crude oil 45-45.9	2.18
Crude oil 50 and above	2.80
Crude naphtha	3.32
Discolored naphtha	3.08

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Of Interest to Sales Departments

ANTIKNOCK GASOLINES LOWER TRACTOR COSTS

Cheaper plowing is now possible on American farms, tests just completed by the Detroit engineering laboratory of the Ethyl Gasoline Corp. show. Antiknock gasolines, it was demonstrated, will propel tractors with a fuel saving of 22 per cent as compared with kerosene.

This economy, however, can be realized only after the compression ratio of the tractor has been increased and the necessary accompanying adjustments made, Earl Bartholomew, director of the laboratory, explained. At present, he pointed out, no high compression tractor engine is made, and only one truck manufacturer produces such a power plant. High compression engines which use only antiknock fuel are standard equipment in 18 makes of passenger cars.

A standard tractor using standard fuel will pull two 16-inch plows in ground-breaking operations. Mr. Bartholomew said. The same tractor, after being altered, and using antiknock fuel, will pull three 16-inch plows at a 7 per cent faster speed, resulting in a total saving of 37 per cent in plowing costs.

An added incentive for using gasoline instead of kerosene in tractors is the rising price of kerosene, due to a shrinking market that increases the marketing costs. Moreover, out of 38 states in which gasoline is taxed, 26 refund the levy when the fuel is used for agricultural purposes. At present ordinary gasoline is used in 82 per cent of the tractors designed to consume kerosene, according to engineers of the Ethyl corporation.

PROGRESS IN FIGHT AGAINST EVASION OF GASOLINE TAXES

Favorable progress in curbing gasoline tax evasion in New England was reported at a meeting of chairmen of New England and New York State gasoline tax evasion committees at American Petroleum Institute headquarters May 19.

It was suggested that some difficulty in collecting taxes and revealing cases of evasion was due to the inexperience of state employes in auditing accounts covering transactions in gasoline and other petroleum products. It was decided to seek to provide, where state officials request or permit, experienced oil account auditors to assist the tax collectors. It was recommended also that tax collecting officials be informed of the ways in which gasoline taxes are evaded, that they might be prepared to cope with any situation.

State chairmen were inclined to deplore the attitude of some state officials that final collection of taxes satisfactorily settles admitted cases of evasion. They felt that penalties should be imposed and steps taken to prevent recurrence of tax-evading activities.

It was reported that attempts are being made in some states to eliminate all provisions for refunding gasoline taxes because of the loss to the State, the expense of handling, and the opportunities for fraud involved. Opinion was expressed that such a move would be decidedly helpful in curbing evasion. The state chairmen endorsed also the plan, put into effect this year by Maine, of requiring renewal of motor vehicle registrations in the spring rather than at the first of the year. It was explained that Maine, by postponing the renewal date until March 1, has obtained thousands of dollars in gasoline taxes from the operators of cars which otherwise would have been idle, and that the cars were operated because the owners were not forced to pay heavy license and excise taxes during the post-Christmas season.

Reports from New Hampshire were to the effect that the State had found the matter of keeping the highways open in winter a paying proposition, because vehicles were operated throughout the winter season and the State collected gasoline taxes which otherwise would have been lost because of lack of motor travel. Activities of New Hampshire highway patrolmen in checking and inspecting all motor trucks coming into the state, particularly gasoline tank trucks, was credited for reported efficiency in curbing tax evasion in that state.

Reports from New York State indicated a belief that tax evasion was considerable, particularly in the Metropolitan area. Recommendation was made that proper evidence be placed before Governor Roosevelt, with the request that he be asked again to take steps to correct what was described as an increasingly bad situation involving widespread tax evasion, substitution, and other evils.

BURNER MANUFACTURERS FIGHT FREE OIL UNITS

NEW YORK, May 21.—A working plan to fight all schemes of oil distributors advertising free range burners and oil burning stoves in exchange for long-term oil contracts has been undertaken by the Distillate Burner Manufacturers Association, according to an announcement made public through the American Oil Burner Associatio..

R. M. Sherman, president of the distillate group and vice president of the American Oil Burner Association, stated that the scheme which the oil burner industry is fighting is "not in keeping with the principle incorporated in the National Code of Practices of the petroleum industry" and that the evidence collected will be presented to the Better Business Bureau in localities where the alleged abuse is flagrant.

"The committee which has been investigating the practice in several cities," Mr. Sherman said, "reported evidence that the promoters of this scheme were advertising in newspapers to give away a range burner for a contract for oil with a small installation charge, when in reality the advertised cost for installing and servicing the burner was far in excess of the average charge of this work and really included the manufacturer's cost of the burner."

SAFETY METHODS FOR FUELING BOAT TRADE

An illustrated poster, designed to promote safety from fire in fueling motor boats and presenting condensed safety rules for the guidance of boat operators and service stations in filling fuel tanks, has been published by the marine committee of the National Fire Protection Association. It was prepared by the conference committee on power boat safety, of which D. V. Stroop, of the American Petroleum Institute's department of engineering, is a member.

The poster illustrates safe and dangerous installations of fuel tanks in work boats, runabouts, cruisers and auxiliaries, and gives safe and approved instructions for filling the tanks of such craft.

Copies of the poster, for display at marine filling stations and elsewhere, are available at cost from the National Fire Protection Association, 60 Batterymarch Street, Boston, Mass., or N.F.P.A. marine committee, 116 John Street, New York, N. Y.

LOW BIDS ON FUEL OIL AND LUBRICATING OILS

The Union Oil Co. and the Associated Oil Co. were low bidders on fuel oil and lubricating oils for the U. S. Navy when bids were opened last week at Washington, D. C. The Union was the low bidder on 4,860,000 bbls. of fuel oil to be used by the Navy during 1933. Its bid was 54 cents per barrel for 3,500,000 bbls. for delivery at San Pedro and a similar price for delivery of 900,000 bbls. at San Francisco and 80,000 bbls. each for Seattle and Honolulu delivery.

For 300,000 bbls. to be delivered by bidder's own tankers at Cavite, Philippines, the Standard Oil Co. of New York was reported to be the low bidder at prices of $1.06 and $1.09 per barrel for the first and last six months periods of the year, respectively.

The Associated Oil Co. was the low bidder for more than 1,500,000 gallons of California lubricating oils to be used by the Navy during 1933. The Associated bids ranged from 10 to 25 cents per gallon for various grades of lubricating oils, including oils for marine engines, marine turbines, Diesel engines and aviation motors. The company has had the lubricating contract of the Navy for the Pacific Coast area for several years.

GERMAN IMPORTS FROM UNITED STATES DROP

NEW YORK, May 21.—Shipments of petroleum from the United States to Germany during the first quarter of 1932 showed a sharp decline, totaling only 51,346 tons, against 126,152 tons in the first three months of 1930, according to reports from Germany. Russia replaced the United States as the principal supplier of German needs, shipping 61,035 tons into Germany in the March quarter.

Total imports of petroleum into Germany during the first quarter this year were only 476,192 tons, against 629,941 tons in the comparable months of 1931. Imports by products were as follows:

	Tons January-March 1932	1931
Gasoline	181,671	279,134
Kerosene	32,952	33,129
Gas oil	76,351	85,076
Lub oil	75,901	100,674
Crude oil	54,552	47,040
Benzol	19,985	23,991

The reduction in German imports during the first quarter was due principally to smaller consumption, due to excessive taxes and the general economic situation, German production having shown a relative slight increase during the period.

STATES OFFER REWARDS IN TAX EVASION CASES

Kansas refiners and distributors have worked out a plan by which they will finance an investigation into the matter of gasoline tax evasion in the State. W. H. Carpenter has been appointed a special prosecutor for the State in the investigation and prosecution of the bootlegging cases. The Kansas oil men are particularly interested in cases where gasoline is being exempted from the state tax on the grounds that it is being used for farm purposes. Some of this exempted gasoline is being resold to cut rate service station operators.

The State of Tennessee is offering a reward of $500 for information leading to arrest and conviction, within 60 days, on charge of evading the State's 7-cent gasoline tax to the amount of $500 or more.

Reward of $500 is made by the Indiana Gasoline Tax Evasion Committee for information leading to the conviction of persons who seek to bring about evasion of the gasoline tax by dumping gasoline into equipment owned and controlled by oil companies. It has been found that in Indiana, where the 4-cent tax ordinarily is paid by the retailer to the wholesaler and then to the State, the retailer later collecting from the consuming purchaser, that unscrupulous dealers and wholesalers have conspired to evade the tax by substituting bootleg motor fuels for those on which the tax has been paid.

CHANGE STATION COLORS

CHICAGO, May 21. — Announcement was made today in the offices of Shell Petroleum Corp. here of a new policy in the color scheme of company owned and franchise service stations. Company owned stucco or cement stations will be colored light gray with red and yellow trim; natural lemon colored brick will be left unpainted, and steel structures will be painted red and yellow with no gray. Stations owned by dealers will remain as they are now, red and yellow, but additional buildings on the dealers' lots are to be painted gray.

MONOPOLY IN CHILE

NEW YORK, May 24.—Standard Oil Co. (New Jersey), which has hitherto been opposed to the principle of oil monopolies, may bid for the newly created Chilean oil monopoly to protect its large investment in that country, it is reported here today.

The state oil monopoly ordered by the new Chilean law last week has not yet been organized, but leading companies are expected to be invited to bid shortly for this business. New Jersey Standard refused to create oil monopolies in Spain and in Nicaragua, but the large business it holds in Chile may force a modification of policy.

SEEK POST OFFICE BIDS

CHICAGO, May 21.—Bids are being asked by the Chicago post office on its third quarter, 1932, gasoline requirements of 250,000 gallons. This is middle octane number material meeting U. S. Motor specifications. Bids will be received until 10 a. m., May 31, and are to be submitted on a differential Group 3 basis, or on basis of price at bidder's bulk plant. Standard Oil Co. of Indiana is supplying gasoline during the current quarter.

NEW OIL TANKER

CHATHAM, Ontario, May 21.—The "Lakeshell," the largest oil tanker ever built in England for Canadian waters, arrived at the Shell Oil Co. dock at Toronto this week. The new tanker, which has a capacity of 700,000 gallons, brought a cargo of gasoline from Montreal.

USE BLENDED FUELS

NEW YORK, May 21. — All motor fuels now sold in Latvia must conform to the government regulation requiring that motor fuels must contain one-fourth (by volume) of added alcohol purchased from the Government Alcohol Monopoly. The order applies to gasoline, benzol, kerosene or other liquid fuels.

ORGANIZE NEW COMPANY

CHICAGO, May 21. — R. N. Mullin, formerly regional manager for Phillips Petroleum Co. in Chicago, has organized the India-Penn Oil Co. with headquarters in Indianapolis. The new company will handle wholesale distribution in Indiana for Quaker State Oil Refining Co.

LICENSORS FOR CROSS, de FLOREZ, HOLMES MANLEY, TUBE AND TANK PROCESSES, AND COMBINATION UNITS

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405 LEXINGTON AVENUE, NEW YORK

Brief Items for Petroleum Refiners

CITIES SERVICE CO. TO BUILD CANADA REFINERY

NEW YORK, May 24.—The Cities Service Co. will build a 3,000-bbl. refinery near Toronto, Ontario, Canada, according to plans practically completed here during the past week. Construction work will be started immediately and the plant is expected to be completed in 60 days.

The company has included cracking equipment specially designed to improve the antiknock value of the motor fuel. The Cities Service subsidiary in Canada has sold a large quantity of motor fuel in the Toronto area and the plant is intended to supply these outlets. Contracts for the construction work were given to Alco Products Co.

PHILLIPS TO ADD TO KANSAS CITY REFINERY

The Phillips Petroleum Co. expects to close contracts by the end of this week for a 7,500-bbl. topping unit and a stabilizing unit to be built at its Kansas City, Kans., refinery. The new crude unit will replace some of the old shell stills.

Auxiliary equipment will be added to permit reforming. The program has been designed to enable the plant to produce motor fuels of higher octane rating rather than greatly increase the output of the plant.

LET CONTRACT FOR TWO LUBRICATING OIL PLANTS

The Argentine government has let contracts for the construction of two complete refinery units for the production of lubricating oils from reduced crude oils. Both units will be installed at the La Plate refinery in the province of Buenos Aires. One will have a capacity of 2,300 bbls. daily and the other 2,200 bbls.

The Alco Products, Inc., has the contract for the two installations. The units are now being fabricated at the Dunkirk, N. Y., plant of the American Locomotive Co. They will be delivered in about four months.

INSTALLING CRACKING AT TAMPICO REFINERY

NEW YORK, May 21.—Mexican Petroleum Co. has started the construction of cracking stills at its Tampico refinery, and the new units will be in operation by the close of the year, said R. G. Stewart, president of Pan American Petroleum & Transport Co., the parent company, at the annual meeting here this week.

Expansion of the Tampico refinery, Mr. Stewart said, had been undertaken to meet the increasing requirements of the company's trade in Mexico. The Tampico refinery is involved in the foreign Pan American properties which Standard Oil Co. (New Jersey) will take over.

LAY NEW PIPE LINE

The Illinois Pipe Line Co. is to lay 7½ miles of new 6-inch pipe line from the Marathon Oil Co.'s refinery in North Fort Worth, Tex., to replace some old line which now connects with the refinery. This is on the company's main line to Ranger. Both companies are subsidiaries of the Ohio Oil Co.

START RUSSIAN REFINERY

NEW YORK, May 21.—Construction work was begun recently on a new refinery at Orsk, according to Russian reports to Amtorg Trading Co. here. Details regarding the type of equipment and size of the plant was not contained in the report.

COMMITTEE FINDS NO EVIDENCE OF EXCESS PROFITS IN CANADA

CHATHAM, Ontario, May 21.—Following an inquiry extending over several weeks, the majority of the House of Commons committee on Banking and Commerce, appointed to inquire into the price of gasoline in Canada, this week reported to the federal parliament that they found no evidence of profiteering in relation to gasoline in Canada.

A minority report submitted by Liberal members of the committee headed by Dr. Thomas Donnelly of Willow Bunch, Saskatchewan, claimed that the price of gasoline in Canada was too high in comparison with the price in the United States. C. E. Bothwell, another Liberal member of the committee, stated that the minority membership of the committee would recommend discontinuance of the fixing of values for duty purposes on gasoline and a cut in the duties now levied on various refinery products.

The majority report, submitted by Chairman R. C. Matthews, states in part:

"Your committee has held 22 meetings and has taken viva voce evidence on oath of 20 witnesses. Numerous exhibits were filed by witnesses.

"The aforementioned witnesses represented the following companies: Imperial Oil, Ltd.; McColl-Frontenac Oil Co., Ltd.; British-American Oil Co., Ltd.; Shell Oil of Canada, Ltd.; East Crest Oil Co., Ltd., and also included individual importers and distributors, in some cases importing direct from the United States, and in other cases purchasing gasoline from Canadian refiners. An officer of the White Star Refinery Co., of Detroit, Mich., also gave evidence concerning the condition of the petroleum industry in the United States.

"Pursuant to authorization given by the House, your committee engaged the firm of George A. Touche & Co., chartered accountants. A summary of the accountants' findings follow:

Report of Auditors

"That the Imperial Oil, Ltd., records relating to 1930 operating costs charged to gasoline showed no evidence of 'cost loading' by reason of affiliations in the United States and South America, or because of unfavorable accounting practices, but rather, that the gasoline costs, if anything, were understated because of the company's conservative policies in not loading into costs such matters as fire insurance premiums, depreciation rates, contingency reserve charges and inventory pricing.

"That the total costs for 1930 were free of charges for interest on capital investment or such as might be related against funded debt or as a charge imposed by a parent company in the form of rental for use and operation of the refineries and marketing stations and equipment. In other words, the financing of Imperial Oil, Ltd., has been effected through the sale of capital stock and the investment of a proportion of surplus earnings in extensions of plant and equipment facilities, without any issue of bonds or debentures upon which interest might be charged.

"That the 1930 marketing costs charged to gasoline while as a whole legitimate from an accounting point of view, were high in relation to total costs. The high cost of marketing is attributed to territorial and climatic conditions and extreme competition obtaining in the distribution and marketing of gasoline in Canada. In view of the fact that the territorial and marketing conditions in Canada are not subject to human manipulation and change, a partial solution of the problem would seem to lie in a concerted action on the part of all distributing companies to eliminate as far as possible the present costly system of marketing.

"That variations of gasoline prices in 1929, 1930 and 1931 to consumers were not based directly upon ascertained refinery costs, but largely upon the variations in the market cost of crude oil with fluctuating additional charges for excise tax, sales tax, freight surcharge and exchange. It has not been demonstrated that any grounds exist for any allegations that the company has taken unfair advantage of either the specific or dumping duties in its gasoline prices to consumers during the period under investigation.

"That the reason for the unfavorable comparison at some points between United States competitive prices and those of the Imperial Oil, Ltd., is due to the demoralized conditions of the gasoline industry in the United States, caused by the overproduction of gasoline and various tax evasion 'rackets' which, in turn, result in the price of United States gasoline falling far below the relative movements in crude oil prices and other costs of production and distribution.

"That the zoning basis of establishing gasoline prices results in the spreading of transportation differentials to the comparative disadvantage of gasoline consumers at centers of trade in proximity to some refineries, whereas the zoning price basis frequently operated to the advantage of gasoline consumers in the territories outlying from the refineries. It was also found that tank wagon gasoline prices are given to farmers and coastal fishermen both east and west.

"That in such outlying districts as have no dealer competition or where any dealer association arrangements exist, the spread between Imperial Oil, Ltd., tank wagon prices and the prices to the consumer is entirely in the hands of the independent dealers.

"That apart altogether from the basis used in the establishing of gasoline prices, the spread between such selling prices and the combined costs of refining and marketing showed an average net profit of not exceeding 1.01 cents per imperial gallon of all gasoline sold by Imperial Oil, Ltd., in the year 1930."

TO RECLAIM FUEL OIL

FORT WORTH, Tex., May 21.—W. J. Anson, and J. L. Tyler, both of Dallas, are organizing a Fuel Oil Co. to be located at Camp Switch in Gregg County. The company will build a salvage plant and a casinghead gasoline plant. The salvage plant will be used in reclaiming oil which is otherwise burned in sump holes and slush pits throughout the district. The reclaimed oil will be sold to operators who will use it as fuel oil for drilling wells on their leases.

TO REOPEN REFINERY

LOS ANGELES, Calif., May 21.—Preparations are being made to reopen the refinery at Hanford, Calif., of the Kettleman Hills Gasoline Co. The company which operated the plant for some time has forfeited its lease. The plant is owned by H. H. Bell of Bakersfield, Calif. It has been operated with royalty crude oil secured from the Kettleman Hills Field which is about 40 miles from the refinery.

WARN REFINERS AS TO CONTRACTS ON LUB OIL

Refiners are warned to protect themselves in the matter of making contracts covering lubricating oils sales in a bulletin issued by the National Petroleum Association. According to the association it appears now certain that the Revenue Act of 1932 will contain a manufacturer's excise tax on lubricating oils.

The tax will apply to all lubricating oils sold in the United States by the manufacturer or producer on and after a certain day, which will probably be the fifteenth day after the law is enacted. If the language of the Senate Bill, as it now stands, becomes law, the tax must be paid by the manufacturer or producer; but if prior to May 1, 1932, the manufacturer or producer has made a contract which does not permit the amount of the tax to be added to the sales price, then the purchaser shall, instead of the manufacturer or producer, "pay so much of the tax as is not so permitted to be added to the contract price."

The result of this is that if a manufacturer or producer has made a contract on or after May 1 in which he has not provided that the tax shall be added to the selling price, the tax will be collected from the manufacturer or producer and he may not be able to recover anything additional from the purchaser.

In other words, as the Senate Bill now stands, it is only with respect to contracts for the future which were made prior to May 1 that the Government will collect the tax from the vendee and then only in the case of those contracts whose terms do not permit the tax to be added to the purchase price. In any contract made on or after May 1, 1932, the manufacturer or producer must pay the tax and therefore if he wants to get the money from the vendee he must make specific provision therefor in his contract of sale.

COMPLETE IMPROVEMENT PROGRAM AT FORT WORTH

The Magnolia Petroleum Co. is completing a general improvement program at its No. 1 Fort Worth, Tex., refinery, and part of the equipment is now in operation. The company rebuilt a Cross cracking unit, including a new furnace. A new cracking unit also was installed. The M. W. Kellogg Co. had charge of this construction work.

A new gasoline recovery and stabilizing unit for the refinery was installed by the C. F. Braun Co. This unit will handle all the wet gases at the refinery. A number of the refinery's tanks are being reroofed.

TO MOVE REFINERY

LOS ANGELES, Calif., May 23.—The Olympic Refining Co. of Long Beach, Calif., has announced plans for moving its skimming plant located at Lovell, Wyo., to Baca, N. Mex. At the new location the plan will operate with crude oil from Hospah Dome in McKinley County. The plant, which has a capacity of 1,000 bbls. daily, will be connected by pipe line to the field.

BOBROSE ELECTS OFFICERS

At a meeting of the recently organized Bobrose Oil & Refineries, Inc., the following were elected officers and directors of the company: Robert Rose, president; Mrs. Robert Rose, vice president; H. M. McDaniel, secretary and treasurer; Giles M. Bailer, manager of sales, and H. E. Read, manager of refineries.

Manufacture of Natural Gasoline

Year's Activities Research Committee Outlined in Report

In outlining the activities of the Technical Committee of the Natural Gasoline Association of America over the past year, R. C. Alden of the Phillips Petroleum Co. as chairman offered the following report to members of the association at its annual meeting in Tulsa in the past week:

"In co-operation with other committees several articles and news items were prepared with the objective of popularizing the new grading system. The factors covered were the relationship of the new and old systems, the plant yields of the various grades under the new grading system, and the antiknock ratings of natural gasoline.

"Minor changes in the A.S.T.M. Reid vapor pressure method were studied and recommended to the proper committees of the American Society for Testing Materials.

"It has been evident for some time that additional research work is necessary in regard to vapor lock. This matter has received much consideration by your Technical Committee. After much discussion and with the approval of the board of directors, a research program has now been launched. The work is to be done by the Bureau of Standards under the direction of the Co-operative Fuel Research Steering Committee. The Technical Committee is planning to keep in close touch with this work. Last month Messrs. Miller, Brown, Oberfell and Alden visited Washington to assist in the start of the project.

"Occasional instances of discrepancies in test results by the Reid vapor pressure method have been called to the attention of the Technical Committee. As a result of this, some work has been done, and more is planned, to determine the precise effect of such minor factors as air temperature, liquid temperature, air solubility, dissolved gases, etc. It is the opinion of your Technical Committee that these discrepancies are probably due to unobserved failures to follow the method in full detail. Nevertheless it will fortify the procedure to have definite data in regard to these minor variables.

"Due to the low prices prevailing for natural gasoline there has been a persistent demand for blending information. Jobbers and independent marketers are already receiving much of our production. To assure ourselves that natural gasoline will be used with some promise of satisfaction to the consumer, a blending pamphlet is being prepared.

"A program of regular monthly meetings of the committee was established in December with the idea of discussing the technical problems of the industry. The exchange of information thus made possible has been very beneficial.

"In regard to future activities of the Technical Committee, there are of course a number of important unfinished assignments, the most vital of which is the vapor lock research. Other possible activities which suggest themselves are the following:

"1. The antiknock values of natural gasoline.

"2. The performance features of motor fuels with large percentages of natural gasoline.

"3. Study of blending at bulk stations.

"In conclusion, the association is indebted to those companies who have contributed to the membership of the Technical Committee. That this work has gone on is a tribute to the progressiveness of the association."

ECONOMIES EFFECTED IN A NATURAL GASOLINE PLANT

By F. E. Shryock
Shell Petroleum Corp.*

Webster tells us that "economy" is "thrifty operation," or "an act or means of saving." We need not be reminded that recent months have necessitated observance of Webster's definitions.

In our own company we practice an economy code as follows:

1. Equipment must be kept in safe operating condition. No nickle plate or wasted time in unnecessary cleanup work, but all equipment must be in sound mechanical condition without undue deferred maintenance.

2. Man power must be used to its fullest possibilities. If men are capable of double duty, they must be so used. If necessary to transfer men to achieve this result, this must be done.

3. Man power must be supplemented by mechanical control where possible.

4. Extraction efficiency must be kept at peak. In other words, economies which make temporary showing at the expense of long-time production loss will not be tolerated.

5. Safe operating practice is more important than economy. Safest operation in the long run is the cheapest operation, since the cost of one accident eats up a whole series of poorly chosen operating economies.

In line with such an operating code, and in order to get the most out of our own plants, most of which are among the smaller sized units, it has been necessary to secure the fullest possible co-operation from men. To initiate this program, two years ago we began a series of plant superintendents' meetings designated to fully inform each operating group with the finer points of economical procedure. At the first meetings papers and discussions were presented by the staff heads from the office on various phases of operation. Then, as superintendents became more at ease in the meetings, individual superintendents were called upon to work up papers and data on specialized subjects. As might be expected, we found certain men with a decided flair for some particular phase of operating. Those men were encouraged to work up the specialty for which they showed particular aptitude.

As instances, we have one man who has made a two-year study of packing, another, plant organization and handling of men, another, boiler feed water and their treatment, another gasoline treating and its mechanical ramifications, another, lubricating economy on mechanical units, and still another the testing and trouble shooting on distillation units.

From these studies we have evolved an operation test sheet which, with its instruction sheet and with the assistance of analyses from the general laboratory, enables each plant superintendent to make a complete material balance on his plant and put his finger exactly on any unit failure in his operation. Formerly, we did this work out of the Tulsa office with specially trained men; now we are saved this expense and the individual plant superintendent takes a greater interest in his own work.

Most of our maintenance cost is in the upkeep and repair of prime mover units. In hard times we dislike spending money for repair parts. Some time ago, an idea was presented and a request for money to build portable boring and facing machines. The money was allowed and last week the refacing unit completed rebuilding its thirty-fifth engine head. This machine is capable of facing heads or cylinders, the boring machine handles reboring of rebabbitted crank boxes or drills crank pin webs, etc. A third machine faces valves after refacing with Tobin bronze, which gives a longer life than the original valve, with almost negligible cost of labor and material. We estimate that the refacing machine alone, which cost about $375 complete, has already saved us nearly $2,000 in machine shop costs, and probably as much more in replacement parts whose purchase was made necessary.

In addition to working out his portable machine shop, the man in charge of repairs has also worked out lubricating oil consumption reports and put into practice a schedule of proper quantities and grades of oil for each prime mover, which we estimate has decreased our lubricating oil consumption 30 per cent. This schedule also is used to cross check the condition of engine equipment and frequently discloses trouble before it is evidenced in the engine itself.

In this connection he also worked out a small metallic oil scraper packing for low pressure and vacuum compressor cylinders which has decreased crankcase consumption of lub oil as much as 30 per cent.

The work put on packing requirements by one plant superintendent has resulted in two things. One, a proper understanding of packings and their uses, and the other, suitable means of lubricating packing in severe services. In addition, it has necessitated proper attention to rods themselves, and has resulted in working out methods of returning old rods much superior to our older practices.

When we really began to check up our distillation unit characteristics, it became evident that some plants could never be made efficient until something radical was done about mineral seal oil characteristics. One of our plant superintendents volunteered to do something about this, so the problem was turned over to him. He reported back at the next meeting with complete data on the distillation characteristics of the oil, together with suggestions for redistillation equipment. Using his data, we designed a small fire still unit to operate continuously, which was manufactured with a welding torch from junk gathered up around the plant. This unit saves us approximately $300 per month in mineral seal makeup cost and, in addition, cuts out expensive maintenance by eliminating necessity of cleaning preheaters once or twice a month. The average production of this plant also increased about 400 gallons daily, due to better absorption oil.

At one heavily loaded plant we needed a slightly higher oil circulation than we could get with existing equipment. At one of our meetings it was agreed to run a special test on this plant with our regular mineral seal, then change to kerosene and run a second or check test. We found the change gave us a heat exchange K value increase from 61 to 74, permitted an increase of circulation of 6 per cent with equivalent pump discharge pressures, and a final cold oil temperature about 7° to 8° lower. These changes accounted for approximately 500 gallons daily of production, and even with additional cost of absorbent oil gave us an increased earning of $200 to $300 per month.

Pressure pilots used to cost us from $60 up. Equivalent pilots now cost us a second-hand gauge, about $2 cost in machine work and some small connections, the aggregate amounting to less than $10. Formerly we bought rather expensive motor valves. Now we buy only three sizes of inexpensive motor valves, 1, 2 and 4-inch, and the manufacturer who furnishes them also furnishes at very nominal cost replaceable plugs and seats which enable any valve to be sized downward in capacity.

In some of our plants we purchase water at so much per barrel. When loads are heavy and water hard, frequent boiler cleanouts are necessary and the bill for water, driving tube cleaners is excessive. In one such plant using water tube boilers, a temporary head was designed to fit the lower water drum with portable swing connections to the boiler cleanout sewer. This sewer in turn was connected into a small settling tank from which an extra pump furnishes pressure to the tube cleaner. The saving effected amounts to several hundred barrels of water per month at 3 cents per barrel, making a noticeable decrease in operation cost.

In another plant we are short of residue in winter months. We furnish gas to our own lease operations and objections immediately followed introduction of stabilizer tops into the general fuel system. Fuel gas purchased from a commercial line near this plant costs 20 cents per 1,000 feet. A small cooler and accumulator were set up near the stabilizer and tops run through the cooler. A plant built pilot control held back pressure about 3 pounds below stabilizer operating pressure. In the boiler house a small tubular heater was set up with boiler steam at full pressure surrounding the tubes and stabilizer tops coming into the bottom of the tubes. A standard boiler fuel regulator, pilot controlled, admits gas to the burners and the product comes into the heater only as required by the boiler control valve. The burners used for this job are also plant manufactured out of pipe with a welding torch. The design is ingenious in that it makes all burner air go through the mixer and provides a heavy jet effect at the mixing nozzle. Auxiliary nozzles provide means of using normal residue, if for any reason stabilizer tops fail. Three boilers were fired throughout the winter with good control and no difficulty of any sort. The saving in purchased gas amounted to hundreds of dollars.

In the summer time the same collecting system is used for the stabilizer tops and the fluid expanded in a brine bath to freeze ice for distillation purposes. In some other plants a direct copper coil cools the condenser and receiver system of laboratory distillation outfits by expansion of propane, so that purchase of ice is eliminated.

*Part of paper read before annual meeting National Gasoline Association of America in Tulsa, May 17-19.

SLIGHT INCREASE IN STOCKS OF PANHANDLE

AMARILLO, Tex., May 24.—Natural gasoline manufacturers in the Panhandle area added a small volume of natural to their stocks during April. However, total stocks on hand May 1 were 136,438 bbls. which is relatively low. Production was shown for the month as 471,314 bbls. and shipments totaled 464,277 bbls. leaving slightly over 7,000 bbls. to go to storage. Phillips Petroleum Co. produced nearly half of the total for the area, or 225,711 bbls.

Production will probably decline as the order of the railroad commission to limit production of gas is enforced. Just what effect this will render remains uncertain. The following table shows the production of natural gasoline by counties for April:

County—	Plants	Bbls.
Carson	9	38,655
Gray	19	221,025
Hutchinson	16	184,104
Moore	3	13,300
Potter	2	2,430
Wheeler	4	12,400
Total	53	471,314

VAPOR PHASE REFINING

Each charging stock and cracking unit represents a new problem for the Gray process, but cases where we cannot help the refiner to a profit are rare. The savings are there—let us help you find them.

We will be glad to go over your problems with you and specify Vapor Phase Refining equipment to suit your own needs. Whether you are cracking, or reforming, or both—our process can increase your earnings, eliminate the use of acid and other corrosive chemicals and give you a stable gum-free gasoline with no loss of Octane Number.

THE GRAY PROCESSES CORPORATION
961-975 FRELINGHUYSEN AVENUE
NEWARK, NEW JERSEY

MID-YEAR MEETING PROGRAM FOR INSTITUTE AT TULSA

The lawyer, the geologist, the engineer and the field operator, all of whom have been vitally concerned with the difficult problems of petroleum production, will be heard when the American Petroleum Institute meets in divisional mid-year sessions at Tulsa on June 1, 2 and 3. The program follows:

THURSDAY, JUNE 2—9:00 A. M.
GROUP SESSIONS
PRODUCTION DIVISION

PRODUCTION—(Mezzanine Floor—Junior Ballroom)—(Sponsored by the Central Committee on Drilling and Production Practice.)

Symposium on Well Spacing—Report of the Chairman of the Special Committee on Well Spacing. Fred E. Wood, Standard Oil Co. (Indiana). (Special note: A brief business session of the Central Committee on Drilling and Production Practice—to receive reports of topical committees—will precede the symposium. Open to the public.)

REFINING DIVISION
10:00 A. M.

UTILIZATION OF PETROLEUM GASES—(16th Floor—Crystal Ballroom)

Miscellaneous Economic and Technical Problems of the Liquefied Gas Industry. Alois Kremser, Standard Oil Co. of California.

Design of Vapor Recovery and Rectifying Units. G. G. Brown and M. Souders, University of Michigan.

Reforming of Gaseous Hydrocarbons. W. W. Odell, Columbia Engineering & Development Corp.

Gas Cracking and Reforming Processes. O. M. Setrum and J. A. Guyer, Phillips Petroleum Co.

Following a recommendation of the Program Committee of the Division of Refining, there will be no preprints of papers presented before the group sessions of the division for distribution at the mid-year meeting. In so far as they are available, preprints will be mailed to those who request them in advance of the meeting as an aid in promoting a thorough discussion of each paper.

THURSDAY, JUNE 2—10:00 A. M.
GROUP SESSIONS
MARKETING DIVISION

MARKETING PROBLEMS — (16th Floor—Dining Room)

The Marketing of Petroleum Products. W. T. Holliday, Standard Oil Co. (Ohio).

As a State Secretary Views the Code. J. R. Atchison, Oklahoma Code Committee.

The Code and Good Business Management. Speaker to be announced.

GENERAL SESSION
2:00 P. M.

PRODUCTION, REFINING AND MARKETING—(16th Floor—Crystal Ballroom)

The President's Address. Amos L. Beaty, American Petroleum Institute.

Address of Chairman, Division of Production. Charles F. Roeser, Roeser & Pendleton, Inc.

A Statistical Survey and Economic Forecast of the Refining Situation. Albert J. McIntosh, Standard Oil Co. of New York (for the Institute's Committee on Refinery Statistics and Economics). John W. Frey, Bureau of Foreign and Domestic Commerce (for the Federal Oil Conservation Board).

The Taxation of Gasoline. Henry F. Long, Commissioner of Corporations and Taxation, Commonwealth of Massachusetts.

FRIDAY, JUNE 3—9:00 A. M.
GROUP SESSIONS
PRODUCTION DIVISION

DRILLING PRACTICE — (Mezzanine Floor—Junior Ballroom). (Sponsored by the Central Committee on Drilling and Production Practice).

Drilling Fluids—California Area. A. C. Rubel, Union Oil Co. of California.

Drilling Fluids — Mid-Continent Area. Stanley Gill, Houston, Tex.

Prime Movers—Improvements in Boiler Design. J. E. Eckel and D. B. Harris, Humble Oil & Refining Co.

REFINING DIVISION
10:00 A. M.

GENERAL TOPICS — (16th Floor—Crystal Ballroom)

Preventing Escape of Mercaptans in Reclaiming Caustic Soda Used in Washing Gasoline Recovered from Refinery Gases. William Mendius, Sinclair Refining Co.

A New Field for the Economic Utilization of Fuel Oil. P. T. Dashiell, United Gas Improvement Co.

Variation of Viscosity with Temperature. J. C. Geniesse and T. G. Delbridge, Atlantic Refining Co.

Elimination of Sulphur Dioxide Nuisance in Light Oil Sludge Separation. J. B. Rather, Standard Oil Co. of New York.

Friction Testing Methods. G. L. Neely, Standard Oil Co. of California.

Inspection of Valves for Cracking-Still Service. Ross C. Powell, The Texas Company.

Thread Gauge for Checking Internal Thread Taper. F. B. Gilliams, Atlantic Refining Co.

New Aspects of the Free-Wheeling Lubricant Problem. H. R. Wolf and H. C. Mougey, General Motors Corp.

Determining Metal Temperatures. W. S. Gullette, Sinclair Refining Co.

Automatically Indicating Internal Tube Gauge. J. A. McMonagle, C. A. Tines and J. F. Williams, Atlantic Refining Co.

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MARKETING DIVISION
10:00 A. M.

MARKETING PROBLEMS—(16th Floor—Dining Room)

Is It Time to Reduce State Gasoline Taxes? Buxton W. Musser, Ball, Musser and Mitchell.

Taxation. Speaker to be announced.

PRODUCTION DIVISION
1:30 P. M.

PRODUCTION PRACTICE — (Mezzanine Floor—Junior Ballroom). (Sponsored by the Central Committee on Drilling and Production Practices.)

Effect of Ratable Production on Ultimate Recovery. E. V. Foran, Consulting Engineer.

Use of Bottom Hole Pressure Data. H. D. Wilde, Jr., Humble Oil & Refining Co.

Drilling and Production Practice in the Oklahoma City Pool. L. B. Holland, Phillips Petroleum Co.

Slow Pumping. C. L. Moore, Chanslor-Canfield Midway Oil Co.

REFINING DIVISION
2:00 P. M.

MOTOR FUELS—(16th Floor—Crystal Ballroom).

The Gumming Characteristics of Gasoline. O. C. Bridgeman, U. S. Bureau of Standards.

Relation of C. F. R. Knock Ratings to Behavior of Fuels in Service:

Report of the Detonation Subcommittee of the Co-operative Fuel Research Committee. T. A. Boyd, General Motors Corp.

Discussion.

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MARKETING DIVISION
2:00 P. M.

GASOLINE TAX EVASION—(16th Floor—Dining Room)

This session will be devoted entirely to matters pertaining to gasoline tax evasion. Several prominent speakers will lead in discussing and reporting on this important subject.

COMMITTEE MEETINGS
(Time scheduled subject to change)
MONDAY, MAY 30
Morning—10 a.m.

Statistical Subcommittee of Committee on Refinery Statistics and Economics. (Room 312.) Chairman, A. J. McIntosh; secretary, Fred Van Covern.

TUESDAY, MAY 31
Afternoon—2:30 p.m.

Committee on Refinery Statistics and Economics. (Room 312.) Chairman, D. J. Moran.

WEDNESDAY, JUNE 1
Morning—9 a.m.

Committee on Standardization of Oil Country Tubular Goods (tentative). (Room 301.) Chairman, John R. Suman; secretary, Melbert Schwarz.

Committee on Standardization of Pumping Equipment and Engines. (Room 302.) Chairman, T. E. Swigart; secretary, H. N. Marsh.

Central Committee on Standardization (tentative). (Room 303.) Chairman, J. Edgar Pew; secretary, C. A. Young.

Engineering Subcommittee on Steel Tanks for Oil Storage. (Room 304.) Chairman, W. C. Shutts.

Belting Engineers' Subcommittee. (Room 305.) Chairman, D. L. Trax.

Topical Committee on Production Practice. (Room 306.) Chairman, Harvey Hardison.

Topical Committee on Development and Production Research (tentative). (Room 308.) Chairman, Donald E. Dickey.

Special Committee on Well Spacing. (Room 309.) Chairman, Fred E. Wood.

10 a.m.

Committee of the Board on Production Practice. (Mezzanine Floor—Junior Ballroom.) Chairman, Charles F. Roeser; secretary, C. A. Young.

Legal Advisory Committee of the Division of Marketing. (Sixteenth Floor—Dining Room.) Chairman, H. T. Klein.

Committee on Testing Methods and Specifications. (Room 319.) Chairman, K. G. Mackenzie; secretary, R. P. Anderson.

Committee on Disposal of Refinery Wastes. (Room 318.) Chairman, John S. Hess; secretary, D. V. Stroop.

Committee on Corrosion of Oil Field Equipment (Symposium on Corrosion). (Room 317.) Chairman, C. R. Weidner; secretary, D. V. Stroop.

Central Committee on Automobile Transportation. (Room 316.) Chairman, J. C. Bennett; secretary, D. V. Stroop.

Committee on Disposal of Production Wastes. (Room 315.) Chairman, V. L. Martin; secretary, D. V. Stroop.

Subcommittees of Committee on Railroad Transportation:

Subcommittee on Car Service. (Room 314.) Chairman, J. M. O'Day.

Subcommittee on Freight Classification. (Room 311.) Chairman, F. S. Hollands.

Subcommittee on Railroad Equipment. (Room 321.) Chairman, D. V. Stroop.

12:15 p.m.

Central Committee on District Activities (luncheon). (Mezzanine Floor—Dining Room.) Chairman, W. H. Meier; secretary, C. A. Young. (All visiting district and chapter officers invited.)

Afternoon—2 p.m.

Board of Directors. (Sixteenth Floor—Lounge Room.)

Committee on Refinery Technology. (Room 319.) Chairman, Walter Miller; secretary, R. P. Anderson.

Committee on Railroad Transportation. (Mezzanine Floor—Junior Ballroom.) Chairman, Fayette B. Dow; secretary, D. V. Stroop.

Joint Session on Accident Prevention: Committee on Accident Prevention in Oil Fields. (Room 321.) Chairman, R. E. Donovan; secretary, H. N. Blakeslee.

Committee on Accident Prevention in Refineries. (Room 321.) Chairman, C. W. Smith; secretary, H. N. Blakeslee.

Committee on Accident Prevention in Marketing. (Room 321.) Chairman, H. E. Dischinger; secretary, H. N. Blakeslee.

Evening—8 p.m.

Division of Production, General Committee. (Mezzanine Floor—Junior Ballroom.) Chairman, Charles F. Roeser; secretary, C. A. Young.

Division of Refining, General Committee. (Sixteenth Floor—Lounge Room.) Chairman, D. J. Moran; secretary, R. P. Anderson.

Division of Marketing, General Committee. (Sixteenth Floor—Dining Room.) Chairman, W. T. Holliday; secretary, Paul E. Hadlick.

THURSDAY, JUNE 2
Morning—10 a.m.

Committee on Corrosion of Refinery Equipment. (Room 317.) Chairman, Walter Samans; secretary, D. V. Stroop.

Evening—8 p.m.

Advisory Committee on Fundamental Research on Composition and Properties of Petroleum. (Room 320.) Chairman, J. Bennett Hill; secretary, R. P. Anderson.

Chairmen, State Gasoline Tax Evasion Committees. (Sixteenth Floor—Dining Room.)

FRIDAY—JUNE 3
Morning—10 a.m.

Committee on Pipe Line Crossings Under Railroad Tracks. (Room 317.) Chairman, D. S. Bushnell; secretary, D. V. Stroop.

A.P.I. PIPE COMMITTEE

The following changes have been made in the A.P.I. pipe committe personnel: C. M. Scott, Stanolind Pipe Line Co., Tulsa, succeeds W. G. Heltzel in the Mid-Continent district. O. Q. Lomax, Humble Pipe Line Co., Houston, succeeds H. M. Stevenson in the Texas district. H. W. Ladd, Midwest Refining Co., Denver, and A. G. Dana, Sinclair Prairie Oil & Gas Co., Parco, Wyo., have been appointed members of the Rocky Mountain subcommittee. B. E. Byrne, National Supply Co. of California, Torrance, succeeds D. S. Faulkner in the California district.

Stuart Moser, Standard Oil Co. of California, San Francisco, has been appointed a member of the engineering subcommittee, 5-L; C. M. Scott, Stanolind Pipe Line Co., Tulsa, succeeds W. G. Heltzel; O. Q. Lomax, Humble Pipe Line Co., Houston, succeeds H. M. Stevenson, and Oscar Wolf, Texas Pipe Line Co., Houston, has been appointed a member of the same committee.

On the manufacturer's subcommittee C. Wilson, Jr., Harrisburg Pipe & Pipe Bending Co., Harrisburg, replaces H. W. Bishop; W. R. K. Scott, Jones & Laughlin Steel Corp., Pittsburgh, replaces Alexander Milne; B. P. Hazeltine, Wheeling Steel Corp., Wheeling, replaces E. T. Wood, resigned; and R. Furrer, A. O. Smith Corp., Milwaukee, Wis., has been appointed a member.

RUSSIAN PIPE LINE

At the recent all-Russia congress for oil production held at Baku reports were presented with regard to the pipe line from Grosny to the Ukraine. The section from Armavir to Rostov-on-Don is completed and further units are almost finished. Although the equipment of the Rostov station is not yet ready, pumping has begun, and a pressure of 40 to 50 atmospheres has been maintained. In order to insure the projected capacity of the pipe line the Diesel engine equipment at several stations will be increased.

Proration Committee Insists on Impartial Enforcement of Rules

The state-wide proration committee of Oklahoma, the legal promotion committee and their legal advisors, all committees of the Mid-Continent Oil & Gas Association, met Friday, May 20, in Tulsa and placed themselves on record as "favoring a strict, thorough-going and impartial enforcement of every proration order of the Corporation Commission against every operator in the state subject to proration, whether large or small, to the end that not only shall complete equality among operators subject to proration be brought about but to the further end that any and all suspicion of inequality shall be removed."

It was also given as the opinion of the committees that proration so carried out alone will bring unanimous support to the proration orders and will remove all suspicion of inequality.

The committees offered the governmental agencies of Oklahoma any possible aid, in an advisory capacity or otherwise, to enable officials to make proration orders effective against any operator in a prorated district.

The legal committee was instructed to investigate whether and to what extent criminal prosecutions for perjury in making sworn reports, including production tax reports, could be brought against any operator or employe who might make false reports of that character. This action is regarded as extremely important as a means of enforcing orders in the future.

Late Fields

KANSAS

Flynn and others' No. 1 Budde, NE cor. Section 16-18-16w, Rush County, found a showing of gas at 3,465 feet. The log of the well indicates the formations are about 35 feet higher than the Mohr well, 2 miles east.

Skelton Oil Co.'s No. 1 Ott, C SE SE Section 16-19-14w, a wildcat in Barton County, which is now shut down at 3,560 feet, may be drilled deeper. A showing of gas was found in the test at 3,485 feet and oil at 3,530-46 feet.

The wildcat test southeast of the Canton townsite, McPherson County, was drilling deeper to the Viola lime. Skelly Oil Co. and others' No. 1 Sinclair, SE cor. SW Section 25-19-1w, found a showing of gas and water in the chat at 2,926-50 feet. The gas was found from 2,949-50 feet and the water started coming into the hole, killing the gas.

Empire Oil & Refining Co.'s No. 1 Masemore, SW cor. NW Section 18-20-9w, Rice County, was slopping over the top of the hole at the rate of 15 bbls. an hour from the Siliceous lime at 3,315-24 feet. It will be tubed and pumped.

According to Field Umpire L. R. Pickrell, the potential production in the Ritz-Canton area, the Voshell Pool, the McPherson Pool, all in McPherson County, the Schurr Pool and Sharpe area in Rice County, the three pools in Ellsworth County, one well in the Greenawalt area in Rush County, the Richardson area in Stafford County, Hollow area in Harvey County and the Blake area in Reno County was 165,047 bbls. a day. The total daily allowable production from these areas is only 24,765 bbls. daily.

OKLAHOMA

Empire Oil & Refining Co.'s No. 4 B. Fish, in Section 19-7-8, in the Fish Pool, in Seminole County, Oklahoma, made 1,294 bbls. of oil in 14 hours from the Wapanucka lime at 3,093-3,116 feet.

The Stanolind Crude Oil Purchasing Co. is withdrawing as a purchaser of crude oil in the Fish Pool in Seminole County.

Limestone Oil & Gas Co.'s No. 1 in Section 15-7-8, in Hughes County, found the Calvin sand at 1,238-45 feet, where it made 5 bbls. of oil an hour. The oil tested 30 degrees A.P.I. It will probably be drilled deeper.

Indian Territory Illuminating Oil Co.'s No. 1 G. Lord, in the SE cor. NE NE, Section 35-11-3w, Oklahoma City, made 2,683 bbls. of oil in eight hours from the Wilcox sand at 6,553-6,620 feet. It extends production a quarter of a mile west.

Phillips Petroleum Co.'s No. 1 Carr, NW cor. NE, Section 22-11-3w, on the west side of the Oklahoma City Field, flowed 247 bbls. of oil in one and one-half hours from the Wilcox sand at 6,497-6,549 feet.

Empire Oil & Refining Co.'s No. 1 Davis (B) in Section 30-7-8, in the Fish Pool, Seminole County, flowed 371 bbls. of oil in 12 hours, and was then shut in for 16 days under the proration agreement.

Sinclair Prairie Oil Co.'s No. 1 Campbell, in Section 29-9-6, in the south Earlsboro area, found the Calvin sand at 2,684-91 feet with a showing of oil.

Peters Petroleum Corp. and Producers & Refiners Corp.'s No. 1 in Section 24-24-7, in western Osage County, has been pinched to 70 bbls. of oil an hour with a back pressure of 165 pounds. The well made as high as 168 bbls. an hour while flowing wide open from the Silicious lime at 2,790-93 feet.

Amerada Petroleum Corp.'s No. 1 Mitchell, in NW cor., Section 3-6-4, in the south extension area of the St. Louis Pool, in Pottawatomie County, flowed an estimated 250 bbls. of oil from the Hunton lime at 3,950-4,029 feet.

MARLAND OIL CO. OF OKLAHOMA CHARTERED

OKLAHOMA CITY, Okla., May 23.—E. W. Marland of Ponca City, Okla., today received a charter from the secretary of state for formation of the Marland Oil Co. of Oklahoma.

Four other Ponca City residents were listed with Marland as directors of the proposed company, which will have $1,000,000 in authorized capital stock. The other directors are J. S. Alcorn, G. R. Marland, I. G. Harmon and A. W. McCoy.

Each director has subscribed for 100 shares of stock, their application showed. The company is to have 200,000 shares of common stock of $5 par value, and the five directors are to serve until the election of regular officers for the company.

The company is incorporated to produce and ship oil, to operate refineries and to engage "in a general oil or mineral brokerage business by buying, selling or otherwise trading in mineral leases and royalties, and the products and by-products of such leases."

SAN JOAQUIN VALLEY A.P.I. CHAPTER MEETS

LOS ANGELES, Calif., May 21.—Charles L. Kaiser, of Coalinga, and Robert E. Allen of Los Angeles were guest speakers at the regular meeting of the San Joaquin Valley Chapter of the American Petroleum Institute, Division of Production, held in Taft, with 120 members in attendance.

Chairman P. C. McConnell announced the appointment of J. J. Wilt as chapter advisor and Roy Fry as advisory committee member.

MILHAM TO DEVELOP ACREAGE

NEW YORK, May 23.—Milham Exploration Co., subsidiary of Seaboard Oil Co. of Delaware, has entered into a contract with the Southern Pacific Land Co. whereby Milham will develop on an interest basis the fee lands of the Southern Pacific in the Buttonwillow gas field of California, near Kettleman Hills.

NEW TRINIDAD UNIT

NEW YORK, May 23.—British Controlled Oilfields, Ltd., has placed its new light products recovery plant in Trinidad in operation. The plant, in the Palo Seco Field, is now working continuously at full capacity, and the results of its operation are reported to be as satisfactory as the same type unit which the company is using in Venezuela.

High Spots in Field News

KANSAS

Sinclair Prairie Co. connects stripper wells. Valley Center Pool extended. Development in central western Kansas.

CALIFORNIA

Executive Committee on Curtailment revises allotment to 476,700 bbls. with general approval of representatives of operators.

GULF COAST

Conroe district, Montgomery County, field thought proved by well indicated at 1,000 to 2,000 bbls. New leasing play started.

ROCKY MOUNTAIN AREA

Three new locations in New Mexico. Weld County, Colorado, test appeared to be running higher. Osage Pool has 200 bbl. well.

OKLAHOMA

Osage County revived by deep gusher in Hominy district. Martial law lifted in Oklahoma by Acting Governor. Southern area active.

NORTH LOUISIANA, ARKANSAS, MISSISSIPPI

New play in coastal area of Mississippi and Alabama. Two tests north of Mobile. Arkansas wildcats discouraging. Shelby County active.

SOUTHWEST TEXAS

Important well north of Southwest Texas Government Wells district, Duval County. Deep test deal in Kleberg County. Two tests in Saxet Field.

WEST AND NORTH TEXAS

Ten new locations in Permian basin, and 53 in Wichita Falls district. Wildcat in Brewster County and new test in Borden County. Deepening operations in Panhandle.

EAST TEXAS

Largest number of new locations since field ran wide open, 183 in week, with 174 completions and total wells now 5,700. Pressure tests against increasing allowable. Wildcats in outside counties.

MICHIGAN WELL DEEPENED INCREASES TO 2,700 BARRELS

By George A. Whitney

MOUNT PLEASANT, Mich., May 23. Four completions were reported in the Central Michigan Field, one being a dry hole drilled by Hanners, Renner and Jones, in the southeast corner of the Peninsula Oil Co.'s lease, SE NE SE, Section 4, same township.

Talbot Oil Co.'s No. 2-C State, SE SE, Section 10, Greendale Township, Midland County, flowed at the rate of 360 bbls. a day, but was drilled into the second pay sand in the Dundee and the first 24 hours' initial amounted to 2,700 bbls. It seems to indicate that the big oil-producing sand extends well to the eastern boundaries of Section 10, if not farther. It was the second big well to be struck on the state lease during the past few weeks. No. 1 test ranged upwards of 3,600 bbls. Both wells were drilled by the Talbot Oil Co., of which George Talbot of Saginaw is the head. Robert Tope of Mount Pleasant originally leased the tract of land and holds an interest. The two wells on the state tract are on the western side of the lease, making the eastern portion look inviting.

Columbia Oil & Gas Co.'s test in the northwest corner of the George Hornick farm, NW NW SE, Section 15, Greendale Township, Midland County, is reported good for 550 bbls. initially.

The Pure Oil Co. made an addition to the East Pool by bringing in a test in the southeast corner of the T. E. McCann farm, SE SE NE, Section 7, Greendale Township, an offset to No. 1 Holmes in Section 8, which was drilled in before the present far East Pool was discovered.

Pressure Diminishing

The East Pool is the most prolific producing area yet found in Michigan, with approximately 25 wells drilled in a comparatively small area, the gas reserve has been appreciably diminished and oil men believe many other flowing wells will of necessity be transformed into pumpers within the next six months or a year. Two wells of Walter L. McClanahan, Inc., have stopped flowing and are being put on the pump, No. 1 Struble and No. 4 Struble, in the heart of the pool. In the older Chippewa-Greendale Field farther west, most of the wells that formerly flowed are on the pump.

In the East Pool more than 10,000,000 feet of gas has been escaping daily in the production of oil. The drain on gas pressure perhaps accounts in a large measure for the fact that wells brought in during the last two weeks have not produced so sensationally in flush flow as many of the earlier producers.

New Locations

Columbia Oil & Gas Co. made a location for No. 6 on the George Hornick farm, Section 15, Greendale Township, Midland County, on the oil discovery lease, and Pure Oil Co. will immediately offset it with a new well. The Columbia location will call for three offsets by the Pure company.

In the East Pool there still is a wide area open for development and observers believe productive pools will be discovered within the next year or two. The same is true of the North Field of Vernon Township, Isabella County, between Mount Pleasant and Clare.

The Old Dutch Refining Co. has been doing extensive leasing of late in Sections 15, 16, 21, 22, 23, 27 and 28, Wise Township, Isabella County, north and a little east of the Leaton Pool. It is also reported a test well is to be drilled in Fremont Township, near the Deerfield Township line to determine possibilities in the well leased but un-

tested in the southwestern area of Isabella County.

Pure Oil Co.'s No. 2-A Bernard, SE SE SE, Section 8, Greendale Township, below 3,200 feet. W. L. McClanahan's No. 1 Hughes, SW NE NE, Section 20, Geneva Township, Midland County, drilling below 2,800 feet. Columbia Oil & Gas Co.'s No. 1 Hill, SE NW NE, Section 16, Greendale Township, drilling below 2,400 feet. Talbot Oil Co.'s No. 4 Adams, NW SW SW, Section 10, Greendale Township, drilling below 2,200 feet.

New Drilling Permits

New drilling permits are as follows:

Michigan Pacific Oil & Gas Co.'s No. 1 well, 330 feet from the north and east lines of the John Otway farm, NE SE SE, Section 27, Porter Township, Midland County. Pure Oil Co.'s No. 1 well, 330 feet from the north and east lines of the Edward O. Harris & Co.'s farm, NE NE SW, Section 15, Greendale Township, Midland County. Same company's No. 4 well, 330 feet from the south and west lines of the Charles Mullet and others' farm, SW SW NE, Section 15, same township. R. D. Malcolm's No. 1 well, 330 feet from the north and east lines of the Vernon G. Hastings farm, NE NW, Section 14, Greendale Township, Midland County. Leon G. Thompson's No. 1 well, 990 feet from the north line and 330 feet from the east line of the John D. Vandercook farm, SE NE SE, Section 24, Denver Township, Isabella County. F. W. Kehlet's No. 1 well, 1,800 feet from the south line and 250 feet from the east line of the P. J. O'Connor farm, NW SE, Section 31, Oceola Township, Livingston County. Smith Petroleum Co.'s No. 1 well, 330 feet from the north and 330 feet from the north and east lines of the Mrs. Clara M. Studor farm, N half SE, Section 14, Fremont Township, Saginaw County.

NEW PIPE LINES BEING CONSIDERED IN KANSAS

The White Eagle Oil Corp of Kansas City, Mo., will extend its pipe line system by the construction of approximately 22 miles of 6-inch line from East Valley Center in Sedgwick County, Kansas, to the company's Kemper Station, 11 miles north of Augusta, in Butler County. At the Valley Center Station it will connect with the company's 6-inch pipe line running north into McPherson County to the Ritz-Canton Field.

The contract has been let to Knupp and Fredell of Amarillo, Tex. The pipe for the project is now in transit. Right of way work has been completed.

Another link extending more than 50 miles to the west to serve the oil producers along the Barton-Ellsworth arch, in Rice, Barton and Ellsworth Counties and other fields in this area may be built eventually by the White Eagle Oil Corp.

The Standard Oil Co. of Kansas is considering seriously the construction of 150 miles of 8-inch pipe line from the Voshell Pool in Kansas to the company's refinery at Neodesha, Kans. Such a line probably would necessitate the building of three pump stations and it is understood Diesel engines will be installed in the stations if the line is constructed.

B.O.D. PLANS EARLY PIPE LINE SURVEY

(Continued from Page 17)

easy country with sound soil, and can use the railway for transport of all material, food, etc., thus insuring themselves an enormous saving in respect of lorries, roadmaking, lifting tackle and the other expenses. Indeed, it has been estimated that the costs of oil transport in the case of the B.O.D. will show an advantage of 7s.6d. per ton.

"The oil companies associated with the operations east of the Tigris—the Standard of New Jersey and New York, the Anglo-Persian, and the Royal Dutch-Shell —are the most experienced and successful in the world, and the fact that they are willing to incur the heavy additional cost of their pipe lines, as compared with the cost of that of their neighbors, with resultant perpetual heavier charges, is a clear indication of their opinion of the value of Iraq and its position in regard to the European market.

"It is obvious that if Iraq oil is a good business for the I.P.C. it must be an even better one for the B.O.D., which company is in the happy position of not having, in calculating its profits, to make provision for satisfaction of interest on bonus shares and expenditure on unprofitable areas, and on the scale demanded by the excessive overvaluation of shares on the stock markets. Even the royalties payable are less than those on Rumanian export, and, as the company can certainly expect the 'most favored nation' treatment from its own shareholders, such as the A.G.I.P. of Italy, a prosperous future would appear to be assured. The strategic advantages of the Iraq position undoubtedly appealed to the Continental interests identified with this British company; the Mediterranean really being a huge lake, all the entries being little more than canals, easily blocked in time of war, thus depriving the contingent countries of any oil supplies other than those of Iraq."

AMERICANS AWARDED IRAQ PIPE LINE ORDERS

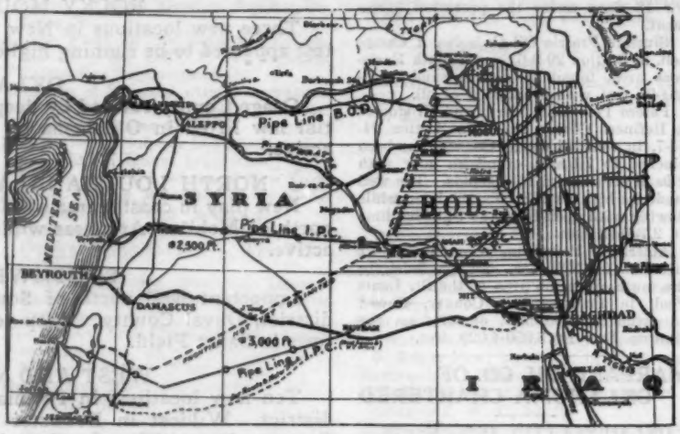
NEW YORK, May 23.—The United States Steel Corp. has been awarded a contract for 8,000 tons of 10¾-inch seamless tubing for shipment to Iraq for use in the construction of Iraq Petroleum Co.'s pipe line. The domestic price on similar pipe indicates the order aggregates about $4,000,000.

White Motor Co. of Cleveland received an order for 10 heavy duty trucks and 10 trailers, Allis-Chalmers Co. an order for 11 tractors and 26 trailers, Caterpillar Tractor Co. 11 tractors, and International Harvester Co. 10 heavy duty trucks and 5 trailers.

C. Stewart Morgan, manager of Near East Development Co., American unit of Iraq Petroleum Co., indicated that about 25 per cent of the expenditures for supplies for the pipe line between now and 1934 will be allotted to the United States.

While United States Steel Products Corp., United States Steel's exporting subsidiary, received the Iraq pipe order, it is reported the order may be allocated among other steel tube producers, particularly Youngstown Sheet & Tube Co. and Spang, Chalfant & Co.

Unfavorable exchange rates, it is understood, have played an important part in diverting much of the line pipe business of Iraq Petroleum Co. to European mills.



The areas comprised in the two great Iraq concessions are shaded on the above map, the horizontal shading covering the grant to the B.O.D. Co. and the vertical markings that of the older Iraq Petroleum Co. A suggested pipe line course from Mosul to Alexandretta (the line of the B.O.D.) is shown by a line with rings, the fixed route of the I.P.C. being shown similarly in the south.

HOLTON H. SCOTT DIES

NEW YORK, May 23.—Holton Henry Scott, public utility operator and associated with Henry L. Doherty in the organization and management of Cities Service Corp., died at his home at Pelham, N. Y., at the age of 57. Mr. Scott was a member of the small group who came here in 1906 to start Cities Service Corp. As chief engineer for Henry L. Doherty Co., Mr. Scott examined the properties taken over and operated by this company, and at his retirement in 1922 was general manager in charge of the operations of the public utilities operated by the company.

CALIFORNIA CRUDE OIL PRICES

STANDARD OIL CO OF CALIFORNIA
(Effective June 13, 1931)

UNION OIL CO. OF CALIFORNIA
(Effective June 20, 1931)

For current purchases of crude oil at the well (unless otherwise specified) for allowable crude oil produced in accordance with allocations made by the California Statewide Curtailment Committee.

(All gravities above those quoted take highest price offered in that field)

Gravity	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Torrance	Richfield	Coyote Hills	Santa Fe Springs	Midway-Sunset, Elk Hills Buena Vista Hills	Lost Hills	Santa Paula	Orcutt	Gravity
14-14.9	$ .65	$.65	$.65	$.65	....	$ .65	....	$.65	$.66	$.65	....	$ .55	$.55	$.65	$.55	14-14.9
15-15.9	.65	.65	.65	.65	....	.65	....	.65	.65	.65	....	.55	.55	.65	.55	15-15.9
16-16.9	.65	.65	.65	.65	....	.65	....	.65	.65	.65	....	.55	.55	.65	.55	16-16.9
17-17.9	.65	.65	.65	.65	....	.65	....	.65	.65	.65	....	.55	.55	.65	.55	17-17.9
18-18.9	.65	.65	.65	.65	....	.65	....	.65	.65	.65	....	.55	.55	.65	.55	18-18.9
19-19.9	.65	.65	.65	.65	$.65	.65	....	.65	.65	.65	....	.55	.55	.65	.55	19-19.9
20-20.9	.65	.65	.65	.66	.65	.66	....	.65	.65	.65	....	.55	.55	.65	.56	20-20.9
21-21.9	.65	.65	.65	.66	.66	.67	....	.65	.66	.65	....	.55	.57	.65	.57	21-21.9
22-22.9	.65	.65	* .66	.70	.67	.68	....	.66	.68	.65	....	.56	.59	.65	.59	22-22.9
23-23.9	.67	.67	* .68	.72	.68	.70	....	.67	.70	.66	....	.58	.60	.65	.61	23-23.9
24-24.9	.69	.69	*.70	.74	.69	.72	$.69	.68	.72	.67	$ .65	.61	.62	.66	.63	24-24.9
25-25.9	.71	.71	* .72	.76	.70	.74	.71	.70	.74	.69	.65	.64	.64	.68	.65	25-25.9
26-26.9	.73	.73	* .74	....	....	.76	.73	....	....	.71	.65	.66	.66	.70	.67	26-26.9
27-27.9	.75	.75	* .76	....	....	.78	.75	....	....	.73	.68	.68	.67	.72	....	27-27.9
28-28.9	.77	....	....	....	....	.80	.77	....	....	.75	.71	.71	.69	.74	....	28-28.9
29-29.9	.79	....	....	....	....	....	.79	....	....	.77	.73	.74	.71	.76	....	29-29.9
30-30.9	.81	....	....	....	....	....	.81	....	....	.79	.75	.76	.72	.78	....	30-30.9
31-31.9	....	....	....	....	....	....	.83	....	....	....	.78	....	....	....	....	31-31.9
32-32.9	....	....	....	....	....	....	.85	....	....	....	.80	....	....	....	....	32-32.9
33-33.9	....	....	....	....	....	....	.87	....	....	....	.82	....	....	....	....	33-33.9
34-34.9	....	....	....	....	....	....	.89	....	....	....	.85	....	....	....	....	34-34.9
35-35.9	....	....	....	....	....	....	....	....	....	....	.87	....	....	....	....	35-35.9
36-36.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	36-36.9

Santa Paula and Orcutt—Posted only by the Union Oil Co.

Playa Del Rey—Subject to a field gathering charge of 5 cents per barrel.

Huntington Beach—Union Oil Co.'s price schedule reads: 14 degrees up to 22.9 degrees, inclusive, 65 cents per barrel; 23-23.9 degrees, 67 cents, with 2 cents added for each degree upward to 27-27.9 degrees, at 75 cents.

Wheeler Ridge—Standard Oil Co. posts 55 cents for all grades.

Coalinga—Standard Oil Co. and Union Oil Co. post 55 cents for all grades up to and including 24-24.9 gravity, and 57 cents for 25 gravity.

Newhall, McKittrick and Kern River—Standard Oil Co. posts 55 cents per barrel for all grades.

McKittrick, Kern River, Midway-Sunset, Elk Hills and Buena Vista Hills—Union Oil Co. pays 50 cents for 11 to 13.9 degrees, and 55 cents for all other grades.

Montebello—Standard Oil Co. and Union Oil Co. post 65 cents per barrel for all grades.

Whittier and La Habra—Standard Oil Co. posts 65 cents per barrel for all grades.

Elwood Terrace—Standard Oil Co. posts: 33-33.9 degrees, 79 cents; 34-34.9 degrees, 81 cents; 35-35.9 degrees, 84 cents; 36-36.9 degrees, 87 cents. All prices f.o.b. ship.

Santa Fe Springs—Union Oil Co.'s top price is 85 cents per barrel for 34-34.9 gravity.

Coalinga—By the Union Oil Co., effective May 17, 1932: 11 to 13.9 degrees, 50 cents; 14 to 24.9 degrees, 55 cents; 25 to 25.9 degrees, 57 cents.

ASSOCIATED OIL CO PRICES

Associated Oil Co. prices effective June 20 are as follows:

Ventura Avenue—22 gravity, 58 cents, with 2 cents added for each degree upward to and including 30 gravity, which is 74 cents.

Kettleman Hills—The Associated Oil Co., effective at 7 a.m., February 5, 1932, withdrew and canceled any and all prices heretofore published and in effect for Kettleman Hills oil.

Potrero—24 gravity, 69 cents, with 2 cents added for each degree upward to 34 gravity which is 69 cents.

General Petroleum Co. in Kettleman Hills, effective January 1, 1932: 33-33.9°, 66 cents; 34-34.9°, 68 cents; 35-35.9°, 70 cents; 36-36.9°, 72 cents; 37-37.9°, 74 cents; 38-38.9°, 76 cents; 39-39.9°, 78 cents.

Properties Of the Paraffin Hydrocarbons And Design of High Pressure Equipment

* * * * * *

By Dr. George G. Brown and Mott Souders, Jr.
University of Michigan*

WITH the increasing accuracy of engineering design it is evident that the convenient approximations of the ideal gas laws cannot be used to obtain satisfactory results particularly at high pressures. The paraffin hydrocarbons closely approach ideal solutions in both vapor and liquid phases, although deviating widely from the laws of ideal gases.

The experimental data on the P-V-T relations of the paraffin hydrocarbons are far from complete but appear adequate as a basis for interpolation so that these relationships may be estimated with sufficient precision for engineering work. By the use of the P-V-T relations so derived, the fugacities of the liquid and vapor hydrocarbons may be computed. By use of the fugacities and the relationships of ideal solutions the equilibrium between the liquid and vapor phases may be computed as a function of temperature and pressure. These computations have been made and are presented in the form of equilibrium plots giving the ratio between the mol fraction in the vapor and the mol fraction in the liquid as a function of temperature and pressure for each of the paraffin hydrocarbons.

The use of these equilibrium relationships is demonstrated in the computation of the number of equilibrium plates required in absorbing columns and stripping columns as used in the natural gasoline industry and in vapor recovery systems. For this purpose the derivation of Kremser has been extended to include conditions in which the lean oil is not completely stripped of the absorbable components. These relations have been combined into a convenient plot for determining the performance of absorbing columns when handling complex mixtures such as wet natural gas. Similar relationships have been derived for the stripping columns so that the same graph may be used in determining the operating characteristics of strippers, and gasoline fractionators.

The law of ideal gases may be applied to vapors of the paraffin hydrocarbons with an accuracy sufficient for engineering calculations over only a limited range of temperature and pressure. Under some of the conditions employed in processing these hydrocarbons in the natural gasoline industry the deviations from the ideal law may exceed 300 per cent.

Since the use of the law of ideal gases introduces a factor of uncertainty and a possibility of serious error incompatible with the requirements of modern engineering design and analysis, experimental data on the P-V-T relations of the paraffin hydrocarbons is required. Unfortunately the experimental data now available are meager, although adequate as a basis for interpolation and extrapolation to cover the range of compounds, pressures and temperatures encountered in the natural gasoline industry.

* * * * * * * *

Part 1.—The P-V-T Relations of Paraffin Hydrocarbons

Data Available

Several pressure-volume isotherms of methane above the critical temperature have been determined by Keyes and others[4B] and Kvalnes and Gaddy[5B]. Data on the superheated vapors of normal pentane[7B] and iso-pentane[8B] above and below the critical temperature were reported by Sidney Young. Additional data are provided by the vapor pressures and densities of the saturated vapors of methane[2B], ethane[6B], propane, iso-butane, and normal butane[9B], iso-pentane, normal pentane, di-isopropyl, normal hexane, normal heptane, di-isobutyl, and normal octane[9B].

The theorem of corresponding states suggests as possible means for predicting the unknown P-V-T relations from the available data. This theorem postulates that all substances will have corresponding volumes at corresponding temperatures and pressures if the reference point of correspondence is the critical point. The co-ordinates of pressure, volume and temperature thus become ratios of the absolute value to the critical value which are called "reduced values" designated P_r, V_r and T_r. For the paraffin hydrocarbons, the theroem of corresponding states is a good approximation near the critical, but the deviation from it increase with increasing removal from the critical conditions. Therefore no general reduced equation of state will be satisfactory.

The Reduced Isochores

The data on the P-V-T relations of methane, iso-pentane, and pentane indicate that at constant volume, the pressure is substantially a linear function of the temperature for each compound. If reduced pressures are plotted against reduced temperatures on lines of constant reduced volume—reduced isochores—the data for compounds of widely different critical temperatures are brought together on a single plot so that the constitutive variations may be examined conveniently. These reduced isochores may be represented by equations of the form

$$P_r = MT_r + b \qquad (1)$$

Figure 1 suggests that the slopes and intercepts of the reduced isochores may be a function of the reduced volume V_r and of some constitutive property of each hydrocarbon.

When the slopes of the isochores of methane, normal and iso-pentane, were plotted on log paper as a function of the critical volumes, a straight line was obtained for the group of isochores corresponding to each reduced volume. A similar plot of the intercepts developed a series of parallel lines.

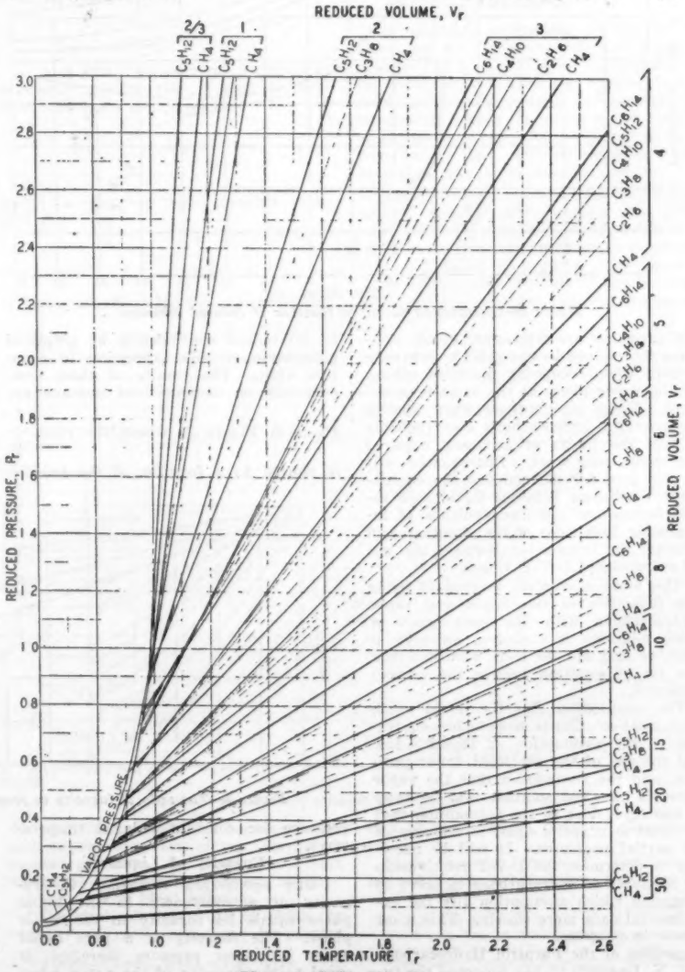


Figure 1—Reduced isochores.

These plots led to the general equations

$$m = x\,V_c^{w} \qquad (2)$$

and

$$b = y\,V_c^{0.455} \qquad (3)$$

in which x, y and w are functions of the reduced volume, V_r, and V_c is the molar critical volume expressed as cubic feet per pound mol.

Equation (1) thus becomes

$$P_r = x\,V_c^{w}\,T_r + y\,V_c^{0.455} \qquad (4)$$

The variables x, y and w are plotted as functions of V_r; x and y in Figure 2 and w in Figure 3.

Compressibility Factor

The P-V-T relations of any gas or vapor may be defined by the equation

$$PV = zRT$$

where z = the compressibility factor — a factor which is a function of temperature and total pressure and may vary with the nature of the gas or vapor.

Cope, Lewis and Weber[12] developed a general plot of z against P_r on curves of constant T_r which was considered applicable to paraffin hydrocarbons of three or more carbon atoms. Below the critical temperature and pressure, where they relied largely on the data on the saturated vapors from pentane through octane, their chart is reasonably satisfactory. Unfortunately beyond the critical temperature or pressure, the data of Young on iso-pentane and normal pentane were overlooked and the development based upon ethylene. For this reason the plot does not check adequately the experimental data on the paraffin hydrocarbons.

Figure 4 is a similar plot developed from the experimental data on saturated vapors, the experimental data on the P-V-T relations of methane, normal pentane, and the interpolated isochores of Figure 1 for C_5H_{12}.

Equilibria Between Liquid and Vapor Paraffin Hydrocarbons

It is customary to use the vapor pressure as a quantitative measure of the escaping tendency of a liquid. The vapor pressure of a liquid is defined as the pressure of the pure vapor in equilibrium with the pure liquid. In the case of mixtures it is customary to assume Dalton's law of partial pressures which is dependent upon the ideal gas laws, and to use as the escaping tendency of a liquid component its partial vapor pressure which is equal to the partial pressure of the same component in the vapor phase under equilibrium conditions. It is also customary to assume that the vapor pressure of a liquid is entirely dependent upon the temperature and independent of pressure. These assumptions may lead to large errors, particularly at high pressures.

Effect of Pressure on Vapor Pressure of Pure Liquid

If a semipermeable diaphragm is placed between a pure liquid and its vapor so that only the vapor be allowed to pass through the diaphragm, the pressure upon the liquid phase may be varied at will independently of that upon the vapor phase. If, under these con-

*Presented at annual meeting Natural Gasoline Association of America, Tulsa, May 17-19.

ditions, the pressure upon the liquid phase is increased, the increase in the escaping tendency of the liquid might be considered as the increase in the vapor pressure of the liquid or the increase in the pressure on the vapor phase necessary to maintain equilibrium conditions. The computation of this increase in vapor pressure of the pure liquid brought about by an increase in external pressure is a classical problem (11R, 14R, 13R), usually solved by placing the increase in "potential" or "free energy" of the liquid phase equal to the increase

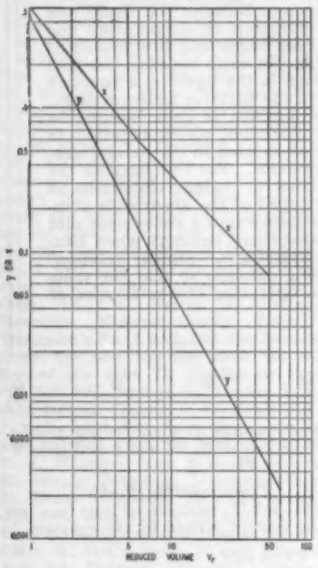


Figure 2—X and Y as function of reduced volume.

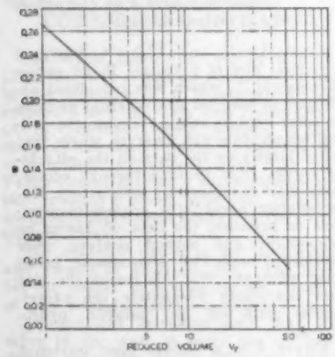


Figure 3—W as a function of reduced volume.

in "potential" of the vapor phase. Using **F** as the symbol for this potential according to the usage of Lewis and Randall

$dF_L = dF_V$

F_L = "potential" or "free energy" of unit mass of liquid

F_V = "potential" or "free energy" of unit mass of vapor

$dF_L = vdP = DF_V = Vdp$

v = volume of unit mass of liquid

V = volume of unit mass of vapor

P = total pressure on liquid phase

p = pressure on vapor phase in equilibrium with liquid phase or "vapor pressure" of liquid

$$Vdp = vdP$$

$$\frac{dp}{dP} = \frac{v}{V} \qquad (6)$$

If the vapor is assumed to be an ideal gas

$$pV = RT$$

$$V = \frac{RT}{p}$$

$$\frac{dp}{p} = \frac{vdP}{RT} \qquad (7)$$

The vapor pressure of the pure liquid p_P when under a total pressure P is different from the normal vapor pressure p_n and may be calculated by integrating equation (7) between limits as indicated below

$$\ln p_P = \ln p_n + \frac{1}{RT}\int_{p_n}^{P} vdP$$

If the vapor is not assumed to be an ideal gas the deviations from the ideal may be properly considered by use of the z function shown in Figure 4. Since

$$z = \frac{pV}{RT}$$

$$V = z\frac{RT}{p}$$

and the equation to be integrated becomes

$$\int_{p_n}^{p_P} z\frac{dp}{p} = \frac{1}{RT}\int_{p_n}^{P} vdP \qquad (8)$$

The results of the integration of equation (8) should give accurately the vapor pressure of a pure liquid as a function of the total pressure upon the liquid. In order to apply the results of such calculations to hydrocarbon mixtures, it is necessary to assume, the validity of Raoult's law for the liquid phase, and for the vapor phase either Dalton's law, or the more general assumption that the total pressure is equal to the summation of the partial pressures of the components in the vapor phase when such partial pressures are determined as the pressure that would be exerted by each component when occupying the total volume of the vapor phase at the same temperature. These assumptions when applied to paraffin hydrocarbons are probably within the limits of accuracy required for engineering work. But equation (8) is not used for determining the equilibrium conditions between liquid and vapor because of the inconvenience of integrating both sides of the equation, and because the integration requires the use of extrapolated P-V-T values.

The more convenient method of using the fugacities of the liquid and vapor hydrocarbons with the assumption of ideal solutions was chosen, although it may, or may not, be more accurate than the use of equation (8) in the manner indicated.

The assumption that the liquid phase is an ideal solution is more or less equivalent to the assumption of Raoult's law and the use of the corrected vapor pressure, and the assumption that the vapor phase is an ideal solution may be more or less equivalent to the assumption that the total pressure is equal to the sum of the partial pressures. It will be necessary to determine the P-V-T relationship for mixtures of hydrocarbons in order to determine which assumption fits the experimental data more closely. This work is now in progress.

Fugacities of the Paraffin Hydrocarbons

G. N. Lewis[12B, 13B] has proposed the fugacity as a general measure of the escaping tendency of a component from a phase. The fugacity is equal to the vapor pressure when the vapor is an ideal gas and may in general be regarded as an ideal or corrected vapor pressure.

Fugacity of Vapors

The isothermal relationship between fugacity and total pressure is represented by the equation [12B, 13B]

$$\left(\frac{\partial \ln f}{\partial P}\right)_T = \frac{V}{RT}$$

If the P-V-T relations of a gas and its fugacity at one pressure are known the fugacities at other pressures may be determined by integration of this equation using the z function from Figure 4 as before,

$$V = z\frac{RT}{P} \qquad (10)$$

$$RT\,(d \ln f) = RT\frac{zdP}{P}$$

$$\int_0^{f_P} d \ln f = \int_0^{P} z(d \ln P) \qquad (11)$$

Since the fugacity is equal to the pressure when the pressure is O the lower limits of the left hand side of the above equation (11) may be omitted and the equation may be written

$$\ln f_P = \int_0^{P} z(d \ln P) \qquad (12)$$

The fugacity at various pressures may be determined conveniently by graphical integration of this expression in equation (12). The results of these computations on methane and pentane are given in Figure 5, where the ratio $\frac{f}{P}$ is plotted as a function of the reduced pressure for constant reduced temperatures.

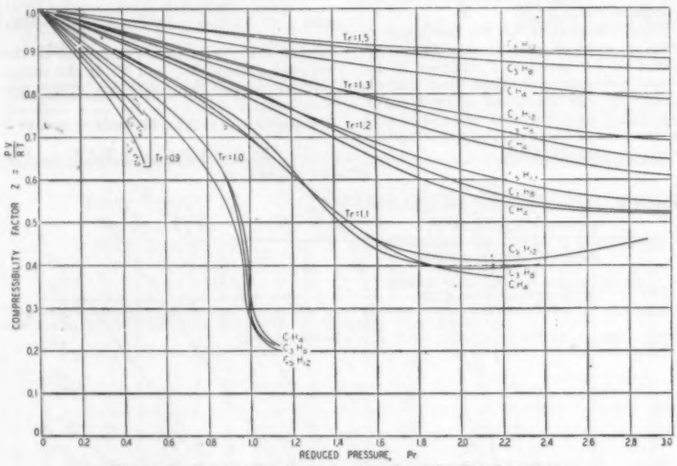


Figure 4—Compression factor as function of reduced pressure.

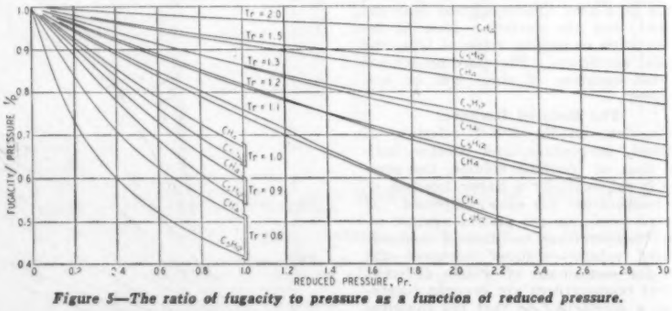


Figure 5—The ratio of fugacity to pressure as a function of reduced pressure.

Fugacity of Liquids

Under equilibrium conditions the fugacity of a component in the liquid phase equals its fugacity in the vapor phase. The fugacity of a pure liquid under its vapor pressure therefore, is equal to the fugacity of the vapor when under the vapor pressure. If the vapor is an ideal gas the fugacity of the liquid is equal to its vapor pressure. Frequently it is desired to use the fugacity of the liquid under a total pressure which is different from the normal vapor pressure of the liquid at that temperature. For such purposes it is necessary to compute the effect of pressure on the fugacity of the liquid at constant temperature. This may be done by use of the equation

$$Rt\,(d \ln f) = v\,dP$$

v = the molal volume of the liquid

P = the total pressures on the liquid

In most cases the compressibility of the liquid is almost negligible so that v may be assumed constant. Under these conditions the integrated equation takes the form

$$\ln \frac{fP}{f_{pn}} = \frac{v}{RT}(P - p_n)$$

When the difference between the total pressure, P, and the normal vapor pressure, p_n, is less than one-tenth of the absolute temperature this effect of pressure on the fugacity of the liquid may be neglected.

The following calculation of the effect of total pressure on the fugacity of liquid normal pentane is given as an indication of the method and importance of making this correction. The ratio between the fugacity of normal pentane at 80° F. under a pressure of 510 pounds per square inch and the fugacity of liquid pentane at 80° F. under its normal vapor pressure of 10.3 pounds per square inch is computed in the following manner. Assuming the liquid incompressible, v is constant at 1.88 cubic feet per pound mol. Then

$$\ln\left(\frac{f_{510}}{f_{10.3}}\right) = \frac{1.88 \times 499.7}{10.71 \times 540} = 0.1627$$

$$\frac{f_{510}}{f_{10.3}} = 1.177$$

Therefore the neglect of the effect of pressure on the fugacity of normal pentane would in this case introduce an error of about 18 per cent. Since these conditions of temperature and pressure are frequently encountered in the absorption of natural gasoline, it is necessary to consider the effect of pressure on the fugacity of liquid hydrocarbons. These calculations have been made and are presented in Figure 6 in which the fugacity of the liquid hydrocarbons is plotted as a function of the reduced pressure for constant reduced temperatures. In mixtures of chemically similar liquids where the forces between unlike molecules are nearly the same as the forces between like molecules, according to the laws of probability the number of molecules of any component leaving the liquid should be proportional to the mol fraction of that component. Solutions of the liquid paraffin hydrocarbons appear to conform to the ideal solution in a reasonable satisfactory manner[5B]. No serious error is to be expected if the vapor mixtures are also expected if the vapor mixtures are also considered ideal solutions, for in the vapor state the molecules are more wide-

[5B] Rogers and Brown, Ind. and Eng. Chemistry, 22, 258 (1930).

ly separated and are allowed more nearly independent action than in the liquid phase. If both liquid and vapor mixtures are regarded as ideal solutions the fugacity of each component is equal to the product of the mol fraction and the fugacity of the pure component in a like phase at the same temperature and pressure, and the general equation for equilibrium becomes

$$f_L x = f_V y \qquad (13)$$

f_L = fugacity of the pure component as a liquid at the same temperature and total pressure

f_V = fugacity of the pure component as a vapor at the same temperature and total pressure.

The errors introduced by these assumptions have been found to be much less than those involved in the assumption of Raoult's and Dalton's law and are apparently within the limits required of modern engineering practice. Further experimental work in determining the equilibrium between liquid and vapor solutions, now in process, must be completed before these relationships can be determined more accurately.

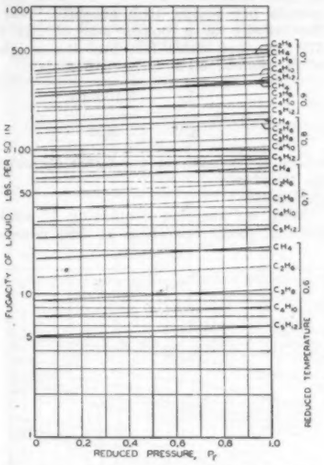


Figure 6—Fugacity of the liquid as a function of reduced pressure.

Equilibria Between Liquid and Vapor Solutions

The equilibrium relationship between vapor and liquid hydrocarbons is of major importance in practically all operations of the natural gasoline industry. At low pressures of not over 40 or 60 pounds the simple rules for approximating equilibrium relationships may be used without introducing serious error in engineering calculations.

Henry's Law

In 1802 William Henry[2B] suggested the relationship which now bears his name. In effect Henry's law may be stated, that unit initial mass of a liquid solvent absorbs a mass of gas which is proportional to the pressure of the gas. Mathematically this may be stated as

$$\frac{x}{1-x} = K p \qquad (14)$$

x = mol fraction of gas in the liquid phase

K = a constant for each temperature

p = pressure of the gas

Dalton's Law

Dalton[1B] while reviewing Henry's data noted that the solubility of each gas of a mixture of gases was proportional to the product of the concentration of the individual gas and the total pressure. On this basis Dalton advanced his law of partial pressures, that the pressure of an individual gas in a gaseous mixture is equal to the product of the total pressure and the concentration of the individual gas[1B].

Combining these two relations we have the mathematical statement

$$\frac{x}{1-x} = K P y \qquad (15)$$

P = total pressure on the gas phase

y = mol fraction of the individual gaseous component in the gaseous phase.

In general it appears that Henry's law is valid when the concentration of the dissolved gas in the liquid phase is small and when the deviation of the gas from the ideal gas laws is slight. All available experimental data which confirm Henry's law were obtained under these conditions.

Raoult's Law

Much later Raoult[4B] suggested that the partial vapor pressure exerted by a component in a liquid solution is equal to the product of the mol fraction of the component and the vapor pressure of the pure component at the temperature of the solution. Mathematically

$p_n x = pp$

p_n = normal vapor pressure of pure component at temperature of solution

pp = partial vapor pressure of component in solution.

Combining this relationship with Dalton's law, Raoult's law becomes

$$p_n x = Py \qquad (16)$$

In general Raoult's law has been observed to apply to solutions of paraffin hydrocarbons in a fairly satisfactory manner over wide ranges of composition when the temperature and pressure are such that the vapor of each component does not deviate greatly from the ideal gas laws at either the vapor pressure of the pure component or at the total pressure. The similarity between Raoult's law and Henry's law at low concentrations of the dissolved components in the liquid phase may be shown by expanding the Henry equation (15) to the series

$$\frac{1}{K}(x + x^2 + x^3 + \ldots) = Py$$

If x is small so that the terms with exponents greater than 1 may be neglected, Henry's law becomes

$$\frac{x}{K} = Py \qquad (17)$$

which is identical with Raoult's equation if

$$p_n = \frac{1}{K}$$

These simple rules for approximating the equilibrium conditions between liquid and vapor introduce serious errors at higher pressures or under conditions where the ideal gas laws do not apply.

The Ideal Solution

"The ideal solution is one in which the fugacity of each component is proportional to the mol fraction of that component at every pressure and temperature"[7B].

Vapor-Liquid Equilibrium Constant

For purposes of convenience the ratio between the mol fraction in the vapor phase and the mol fraction in the liquid phase under equilibrium conditions for any component is defined as the equilibrium constant for that component at the corresponding temperature and pressure. Mathematically this equilibrium constant K may be expressed by the equation

$$K = \frac{y}{x} = \frac{f_L}{f_V} \qquad (18)$$

Since f_L and f_v for each component are functions solely of the temperature and total pressure, the values for the equilibrium constant K may be plotted as a function of temperature and pressure for each component. These values for K are plotted as a function of total pressure at constant reduced temperatures in Figure 7, and on the following log charts as a function of reduced temperature for constant total pressures in Figures 8 and 9.

Through the courtesy of Dr. P. K. Frolich and Dr. L. F. Marek of the Research Laboratory of Applied Chemistry, of Massachusetts Institute of Technology, satisfactory data were made available on the solubility of methane in pentane and other paraffin hydrocarbons at 25° C. and at pressures up to 2,000 pounds per square inch. The equilibrium constants computed from these experimental data are indicated in Figure 9 for purposes of comparison.

In the absence of reliable data on the solubility of gases as a function of temperature, it is suggested that these plots as extrapolated above the critical temperature be used until such data are available.

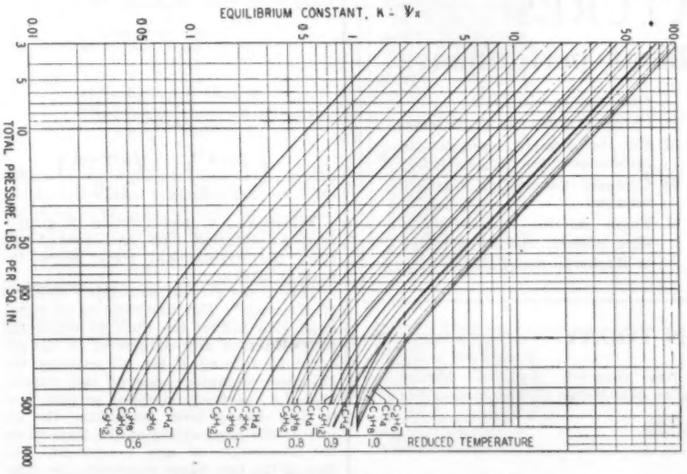


Figure 7—Equilibrium constant as a function of pressure.

PART 2—FUNDAMENTAL DESIGN OF ABSORBING AND STRIPPING COLUMNS

An adequate method for the design of absorbing and stripping columns should provide for a quantitative evaluation of the relationships among compositions, yields, oil or steam rates, and number of equilibrium plates. In addition the method should be simple and convenient in application so that optimum conditions of operation may be determined readily.

The absorption equation developed for natural gasoline absorbers by Cox and Arnold[6B] included an absorption factor derived in an empirical manner from plant data but failed to consider two important variables, the number of equilibrium plates in the column and the composition of the lean or stripped absorption oil.

More recently Kremser[7B] developed a method which includes these variables in a general absorption equation, and an absorption factor based upon Raoult's law. The equation was presented in such form, however, that changes in the composition of the lean oil could not be treated in a convenient manner, and the working chart presented with Kremser's derivation assumed a lean oil which was perfectly stripped of all natural gasoline components. This condition is approached but never attained in actual practice.

Absorption Factor Method

By assuming ideal solutions and employing an equilibrium constant which is a function of temperature and pressure as presented in the previous paper an absorption factor may be developed free from the errors of Raoult's law and the ideal gas laws.

In addition it is assumed that the temperature, pressure, and gas oil quantities are constant throughout the column.

Nomenclature

L = Total mols of liquid.

V = Total mols of gas.

x = Mol fraction of a component in the liquid.

y = Mol fraction of a component in the gas.

$K = \frac{y}{x}$ = Equilibrium constant — a function of temperature and total pressure for each component.

n = Number of plate, starting at top plate of absorber; when used as a subscript indicating the plate of origin from which the liquid overflows or the vapor rises.

M = Molecular weight of absorbent oil.

d = Specific gravity of absorbent oil (at 60° F.).

G = Gallons oil circulated per 1,000 standard cubic foot of gas (measured at 60° F. and 14.7 pounds per square inch absolute).

A = Absorption factor for each component.

$$= \frac{L}{KV} = \frac{3.156\ dG}{KM}$$

Analysis of a Single Plate for Any Component

An equilibrium plate is defined as one from which the vapor rising is in equilibrium with the liquid overflowing to the plate below. Then for any equilibrium plate, (n)

$$y_n = K x_n \qquad (1)$$

From a material balance for any component, the mols absorbed in the liquid are equal to the mols removed from the gas, and since the total mols of liquid and of gas are assumed to be constant

$$L(x_n - x_{n-1}) = V(y_{n+1} - y_n)$$

Substituting $\frac{y_n}{K}$ for x_n and $\frac{y_{n-1}}{K}$ for x_{n-1},

$$\frac{L}{KV}(y_n - y_{n-1}) = y_{n+1} - y_n \qquad (2)$$

$$\frac{L}{KV} = A, \text{ the Absorption Factor} \qquad (3)$$

Solving Equation 2 for y_n and substituting Equation 3

$$y_n = \frac{y_{n+1} + A y_{n-1}}{1+A} \qquad (4)$$

Absorber Consisting of a Single Plate

$$y_1 = \frac{y_2 + A y_o}{1+A} \qquad (5)$$

Where y_1 = mol fraction of the component in the gas leaving the top of the absorber.

y_o = the mol fraction of the component in the vapor in equilibrium with the entering oil (the oil overflowing from plate o or the hypothetical plate above the top plate).

Absorber Consisting of Two Plates

$$y_2 = \frac{y_3 + A y_1}{1+A} \qquad (6)$$

(Continued on Next Page)

[1B] Henry, Wm.—Philosophical Transactions (1803).

[2B] Dalton—Memoirs, Literary and Philosophical Society of Manchester, Vol. 1 (1305).

[4B] Raoult—Compt. Rend.—104, page 1,430 (1887); Z. Physik. Chem. 2, page 353 (1888).

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[7B] Kremser, National Petroleum News, May 21, 1930, p. 43.

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$$y_2 = \frac{(A+1)y_2 + A^2 y_0}{A^2+A+1} \quad (7)$$

Absorber Consisting of Three Plates

$$y_3 = \frac{y_4(A^3+A+1)+A^3 y_0}{A^3+A^2+A+1} \quad (8)$$

Rewriting

$$y^3 = \frac{\left(\frac{A^3-1}{A-1}\right) y_4 + A^3 y_0}{\frac{A^4-1}{A-1}} =$$

$$\frac{(A^3-1)\,y_4 + A^3(A-1)y_0}{A^4-1} \quad (9)$$

Absorber with n Plates

$$y_n = \frac{y_{n+1}(A^n-1)+A^n(A-1)y_0}{A^{n+1}-1} \quad (10)$$

and since $x_n = \frac{y_n}{K}$

$$x_n = \frac{y_{n+1}(A^n-1)+A^n(A-1)y_0}{K(A^{n+1}-1)} \quad (11)$$

From a material balance over the whole absorber

$$A(y_n - y_0) = y_{n+1} - y_1$$

and

$$\frac{y_1 - y_{n+1}}{y_0 - y_{n+1}} = \frac{A^{n+1}-A}{A^{n+1}-1}$$

or

$$\frac{y_{n+1}-y_1}{y_{n+1}-y_0} = \frac{A^{n+1}-A}{A^{n+1}-1} \quad (13)$$

$y_{n+1} - y_1$ = Actual change in composition of the gas.

$y_{n+1} - y_0$ = Maximum change in composition of the gas that would be brought about if the gas leaving the top of the absorber were in equilibrium with the lean oil, or if there were an infinite number of plates.

Equation 13 is expressed graphically in Figure 10.

Evaluation of the Absorption Factor

In engineering practice it is customary to express the liquid-gas ratio, $\frac{L}{V}$, in gallons of oil per 1,000 standard cubic feet of gas measured at 60° F. and 14.7 pounds per square inch absolute. Since the volume of a pound mol of gas is 379 standard cubic feet and the weight of 1 gallon of oil is $8.33 \times d$ pounds,

$$A = \frac{L}{KV} = \frac{3.156\,dG}{KM}$$

where G = gal. oil per 1,000 standard cu. ft. of gas.

Example:

With an absorber containing 12 equilibrium plates operating at 500 pounds per square inch absolute and 100° F., it is desired to recover 94 per cent of the n-pentane from a gas containing 0.36 per cent n-pentane. The lean oil has a molecular weight of 160 and a specific gravity of .8155, and contains 0.2 mol per cent of n-pentane.

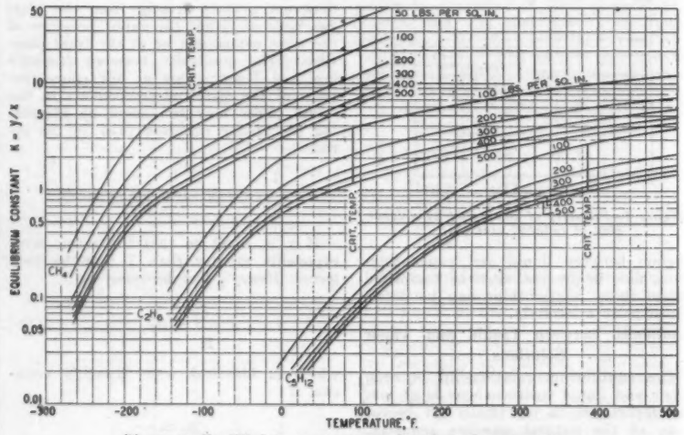

Figure 8—Equilibrium constants as function of temperature.

Solving for y_n and placing the solution equal to y_n from Equation 10.

$$y_n = \frac{y_{n+1} - y_1 + Ay_0}{A} =$$

$$\frac{y_{n+1}(A^{n+1}) + A^n(A-1)y_0}{A^{n+1}-1}$$

$$y_1 = y_{n+1}\left(\frac{A-1}{A^{n+1}-1}\right) + y_0\left(\frac{A^{n+1}-A}{A^{n+1}-1}\right) \quad (12)$$

Where y_{n+1} = mol fraction of component in entering rich gas, (gas rising from the hypothetical plate below the bottom plate n).

This is the general absorption equation of Kremser[7]. The first term on the right-hand side defines the limit to which the composition of any component in the gas could be reduced if the oil entering the absorber contained none of this component, i.e., perfectly stripped so that $y_0 = 0$. The second term determines the effect of the composition of the lean oil on the absorption of any component. The sum of the two terms represents the composition of the gas leaving the absorber.

Kremser's original equation may be arranged in a more convenient form.

Since $\frac{A-1}{A^{n+1}-1} = 1 - \frac{A^{n+1}-A}{A^{n+1}-1}$ Equation 12 may be rearranged

$$y_1 = y_{n+1} + (y_0 - y_{n+1})\left(\frac{A^{n+1}-A}{A^{n+1}-1}\right)$$

Since 0.0036 (1 — 0.94) = 0.000216.

For pentane at 500 pounds and 100° F., K = 0.066, then

$$y_0 = 0.002 \times 0.066 = 0.000132$$

$$\frac{y_{n+1}-y_1}{y_{n+1}-y_0} = 0.976$$

and from Figure 10, A = 1.2.

$$G = \frac{0.066 \times 160 \times 1.2}{3.156 \times 0.8155} = 4.92 \text{ gal. per}$$

1,000 cu. ft. oil circulation required.

Effect of Varying Conditions of Operations

Temperature and pressure affect the absorption factor through the equilibrium constant, K, which has been evaluated for the paraffin hydrocarbons in the previous paper. Since K varies widely among the different components although the operating conditions remain constant, the absorption factor will have a different value for each component. Thus the absorption factor and the recovery of each component must be evaluated individually.

At high pressures, the equilibrium constants and absorption factors for the various paraffin hydrocarbons are less

widely separated than at low pressures. This effect reduces the selectivity of absorbers operated at high pressures so that, as is found in practice, more plates are required at high than at low pressures.

For a constant oil rate the absorption factors (A) for the different components are inversely proportional to the corresponding equilibrium constants (K). Therefore fixing the relative absorption of any one component determines the absorption factors for all components. This fact has been used in constructing Figure 11, which indicates the relative absorption of the gasoline components as a function of the relative n-butane absorption for various numbers of equilibrium plates in the column and for low pressures at 80° F. Inspection of this figure will indicate the effect on the relative absorption of the different components obtained by varying the number of equilibrium plates or other operating conditions.

Absorbers Operating at High Pressure or on Rich Gas

The assumptions upon which these derivations are based are substantially valid for all absorbers operating at moderate pressures and on relatively lean gases. If relatively large amounts of liquid are absorbed from the gas, as when operating at high pressure or with rich gases, the latent heat of condensation is sufficient to raise the temperature of the oil as it flows through the absorber. In order to compensate for this change in temperature it is recommended that the equilibrium constants be selected according to a temperature intermediate between that of the oil in the top and bottom parts of the absorber.

If the oil flow (L) be taken at the top, and the gas flow (V) and the temperature as at the bottom of the absorber, the number of equilibrium plates or the oil rate (G) indicated by this method should be the maximum required. Analysis of operating data obtained from high pressure absorbers (about 500 pounds per square inch) indicates that this procedure is probably ultra conservative for purposes of design.

Stripping Factor Method

If temperature, pressure and the ratio of liquid to vapor may be assumed to be constant throughout a stripping column, a general situation may be developed on the basis of a stripping factor corresponding to the absorption factor used for absorbers.

Usually the assumptions of constant pressure and temperature are sufficiently accurate. If the composition of the oil entering the top of the stripper corresponds to the residual liquid from an equilibrium flash vaporization at the temperature and pressure at the outlet of the feed heater, the assumption of a constant ratio of liquid to vapor is usually adequate. Even if the assumptions are inaccurate, the stripping factor method, when applied to the conditions at the bottom of the column, will determine a maximum steam consumption or maximum number of theoretical plates required.

If the stripping factor, S, is defined as

$$S = \frac{KV}{L} \qquad (14)$$

a derivation similar to the one applied to the absorber leads to an equation for the composition of the liquid leaving the bottom plate of a stripper with n plates, where

$$x_a = \frac{(S-1)\,x_o + S(S^n-1)\,x_{n+1}}{S^{n+1}-1}$$

x_a = mol fraction of the component in liquid leaving the stripper.

x_o = mol fraction of the component in liquid entering the stripper.

$$x_a = x_o\left(\frac{S-1}{S^{n+1}-1}\right) + x_{n+1}\left(\frac{S^{n+2}-S}{S^{n+1}-1}\right) \qquad (15)$$

This is the general stripping equation. The first term on the right determines the effect of the composition of the feed and defines the limit to which the composition of any component of the liquid may be reduced when the entering vapor contains none of this component (i.e., $x_{n+1} = 0$. The second term evaluates the effect of the composition of the entering vapor. The sum of the two terms defines the composition of the liquid leaving the stripper.

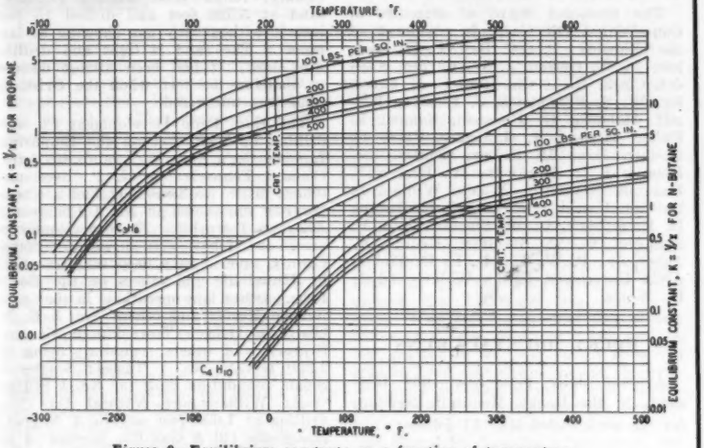

Figure 9—Equilibrium constants as a function of temperature.

Since

$$\frac{S-1}{S^{n+1}-1} = 1 - \frac{S^{n+1}-S}{S^{n+1}-1}$$

Equation 15 may be rearranged

$$x_a = x_o + (x_{n+1} - x_o)\left(\frac{S^{n+1}-S}{S^{n+1}-1}\right)$$

so that

$$\frac{x_o - x_a}{x_o - x_{n+1}} = \frac{S^{n+1}-S}{S^{n+1}-1} \qquad (16)$$

This corresponds to the plot for the absorption factor (Figure 10) so that the same chart may be used for both absorption and stripping calculations. When used for stripping the ordinate of Figure 10 becomes $\frac{x_o - x_a}{x_o - x_{n+1}}$ and the abscissa the stripping factor S. In using the chart it should be noted that the stripping factor

$$S = \frac{KV}{L}$$

whereas the absorption factor

$$A = \frac{L}{KV}$$

Ordinarily steam is used for stripping, so that x_{n+1}, the mol fraction of the component in liquid in equilibrium with the stripping vapor entering the stripper, equals zero, and Equation 16 reduces to

$$\frac{x_o - x_a}{x_o} = \frac{S^{n+1}-S}{S^{n+1}-1}$$

(Continued on Next Page)

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In this case the value of the ordinate read from Figure 1 represents the fraction of the original content of any component of the oil which is removed by the stripping operation.

Evaluation of the Stripping Factor

In practice it is customary to express the steam required for stripping as pounds of steam per gallon of oil. If W represents the pounds of steam per gallon of oil

$$S = \frac{KV}{L} = \frac{KWM}{18 \times 8.33d}$$

Example:

In a stripping column containing four equilibrium plates operating at 320° F. and 50 pounds per square inch absolute, it is desired to reduce the pentane content of the oil from 3.2 per cent to 0.2 per cent. The oil has a specific gravity of 0.8155 and a molecular weight of 160. How much steam will be required?

$$\frac{x_o - x_n}{x_o} = 0.938$$

and from Figure 1, S = 1.63.

For pentane at 320° F. and 50 lbs. absolute, K = 4.0.

$$W = \frac{18 \times 8.33 \times 0.8155 \times 1.63}{4.0 \times 160}$$

= 0.312 lbs. stripping steam required per gallon of oil.

Application to Design

The design of the stripping unit usually must be developed in connection with the design of the absorption unit. The quantity of oil required for absorption depends in part upon the completeness of stripping and the design of the stripping unit depends in part upon the quantity of oil and the completeness of stripping. Economical design usually requires a balance between absorbing, circulating and stripping costs. The absorption and stripping factor methods provide ready means for relating the various factors in these costs.

Example:

It is desired to find the optimum absorption oil and stripping steam rates for a recovery plant. The absorber operates at 400 pounds per square inch absolute and 100° F. The rich gas (y_{n+1}) contains 0.38 per cent and the lean gas (y_1) 0.02 per cent of normal pentane. The stripper operates at 50 pounds per square inch absolute and 320° F. The rich oil entering the stripper (x_o) contains 3.2 mol per cent normal pentane. The lean oil has a specific gravity of 0.8155 and a molecular weight of 160. The cost of circulating, heating and cooling the oil is $0.0005 per gallon. The cost of steam, condensing and refluxing is $0.001 per pound of steam.

The oil rate, gallons per 1,000 standard cubic feet of gas,

$$G = \frac{KMA}{3.156\,d} = \frac{0.085 \times 160\,A}{3.156 \times 0.8155} = 5.29\,A$$

TABLE 1

Stripper $\frac{x_o - x_n}{x_o}$				Absorber $\frac{y_{n+1} - y_1}{y_{n+1} - y_o}$				Lbs. steam per 1,000 cu. ft. gas	Costs—Dollars per 1,000,000 cu. ft. gas		
x_n	x_o	S	W	y_o	$y_{n+1} - y_o$	A	G	GW	Oil	Steam	Total
.0005	.985	2.56	.489	.0000425	.9557	1.10	5.82	2,850	2.91	2.85	5.75
.001	.969	2.05	.392	.000085	.9673	1.15	6.08	2,380	3.04	2.38	5.42
.002	.938	1.62	.309	.00017	.992	1.36	7.19	2,220	3.60	2.22	5.80

The steam rate, pounds per gallon of oil,

$$W = \frac{150\,dS}{KM} = \frac{150 \times 0.8155}{4.0 \times 160} = 0.191\,S$$

For pentane, in the absorber, the equilibrium constant, K = 0.085, and in the stripper, K = 4.0.

$$y_o = x_n K_{absorber}$$

The table below summarizes the results obtained by fixing the composition of the lean oil, x_n, calculating the corresponding y_o, reading the corresponding values of S and A from Figure 10, and obtaining the oil and steam rates and the costs.

Curves for the oil and steam costs may be plotted against the oil rate, G, and the curve for total cost obtained from the sum of the ordinates of the other curves. The curve for total cost obtained from the data of Table 1 passes through a minimum at 6.1 gallons. This is the optimum oil rate indicated by this example.

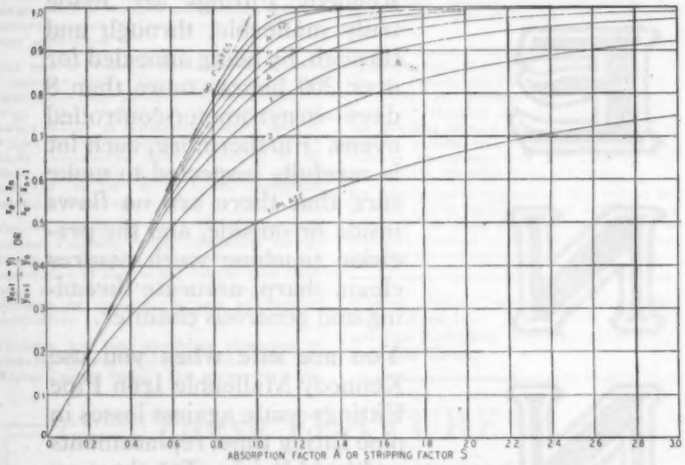

Figure 10—Composition under varying conditions.

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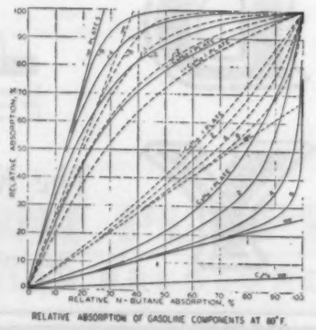

CONSOLIDATED ELECTS BOARD OF DIRECTORS

NEW YORK, May 23.—H. F. Sinclair, chairman of the executive committee of the Consolidated Oil Corp., said at the annual meeting that the company was operating "in the black." At the meeting 9,662,872 shares of common stock were represented, or about 68 per cent of the 14,218,835 shares outstanding.

A charter for the Sinclair Prairie Oil Marketing Co., with a capitalization of $1,000,000, has been obtained in Delaware by the Consolidated Oil Corp. The new company will market and deal in crude oil, taking over the oil in storage of the Prairie Oil & Gas Co.

The re-elected board of directors of Consolidated Oil Corp. is composed of the following: P. deC. Ball, F. H. Bartlett, A. W. Cutten, J. W. Carnes, Sheldon Clark, R. L. Clarkson, C. E. Crawley, W. S. Fitzpatrick, J. Fletcher Farrell, Halstead G. Freeman, Samuel L. Fuller, Herbert R. Gallagher, Clark H. Kountz, Dana H. Kelsey, George MacDonald, J. H. Markham, Jr., Hunter S. Marston, Nelson K. Moody, William P. Phillips, Daniel T. Pierce, H. H. Rogers, H. F. Sinclair, E. W. Sinclair, John R. Simpson, G. T. Stanford, George H. Taber, Jr., P. W. Thirtle, E. R. Tinker, Alvin Untermyer, Elisha Walker and A. E. Watts.

ROCKY MOUNTAIN RUNS

Average daily pipe line runs from fields in the Rocky Mountain territory for the week ended May 21 follow:

WYOMING

	Bbls.
Salt Creek	22,470
Badger Basin	50
Big Muddy	1,660
Byron-Garland	1,750
Dallas-Derby	530
Dutton Creek	70
Elk Basin	560
Ferris	20
Frannie	2,080
Grass Creek	2,120
Hamilton Dome	740
Hudson	440
LaBarge	1,020
Lance Creek	100
Lost Soldier	2,550
Midway	...
Oregon Basin	...
Osage	950
Pilot Butte	30
Rock River	1,670
Poison Spider	90
Teapot	20
Total Wyoming	38,970

MONTANA

Buckley-Border	640
Cat Creek	880
Dry Creek	1,300
Kevin-Sunburst	3,340
Lake Basin	60
Pondera	1,740
Total Montana	7,960

COLORADO

Florence	370
Fort Collins	760
Iles	600
Moffat	690
Orchard	320
Rangely	90
Tow Creek	270
Total Colorado	3,100

NEW MEXICO

Rattlesnake	790
Hogback	400
Table Mesa	75
Artesia	502
Cap Rock	764
Hobbs	30,509
Jal	860
Lea City	1,835
Eunice	496
Texas Pacific	95
Total New Mexico	36,326
Total Rocky Mountain area	86,356
Total previous week	82,051
Difference	4,305

Tioga Field's Open Flow Capacity Given As Half Billion Feet

CORNING, N. Y., May 21.—The Tioga, Pennsylvania, gas field is credited with an open flow capacity of 500,000,000 feet per day, controlled as follows: Lycoming Natural Gas Corp., 192,781,000 feet; Allegany Gas Co., 161,399,000 feet; Mellon Pollock interests, 115,400,000 feet; North Branch Development Co., 28,000,000 feet, and Mutual Natural Gas Co., 11,777,000 feet, a total of 509,357,000 feet.

The Ivers interests' No. 1 Pooley, at Campbell, Steuben County, New York, was reported yesterday drilling around 1,400 feet. Several gas showings have been encountered starting at 275 feet. It is expected the Oriskany sand will be found between 2,800 and 3,000 feet.

Over the line in Pennsylvania the Lycoming Natural Gas Co.'s No. 1 Ida T. Wheeler, in Delmar Township, Tioga County, found good looking Oriskany sand at 5,528 feet and drilled 15 feet into it without any gas showing at last report. The sand is tight and drilling was slow. It had been almost decided to abandon the test when the Oriskany sand was uncovered

The East Penn Development Co. was drilling at 5,450 feet on the Emporium Lumber Co.'s East Fork lands in Potter County, Pennsylvania, J. P. Reed and others drilled to 3,050 feet and are temporarily shut down in No. 1 Champlain, Allegany Township. These developments are in the Hebron area in western Potter County, opened as a deep sand gas field by Hungiville and others on the Booth farm. Other late operations in that area include Keefer and others' No. 1 E. N. Clair, in Hebron Township, a rig up; Schrack and others, running casing at 1,950 feet in No. 1 Tassel; Scarles & Sloan, foundation built for No. 1 Sturtevant; Williamsport Natural Gas Co., drilling at 1,600 feet on No. 1 Nugent; Hungiville Oil & Gas Co., moving in on the location for No. 2 Booth; Potter Development Co., a rig up for No. 1 A. Mattison. All these operations are in Hebron Township

Holton & Drum are drilling at 5,225 feet on the Montrose farm, Eaton Township, Susquehanna County, the most easterly drilling operation in the country at this time.

CODE ON FIELD CARE, USE OF GAS ENGINES

A tentative code on the field care and use of gas engines fostered by the division of production of the American Petroleum Institute has been prepared by John Reid, Oil City, Pa., manufacturer, and now is being subjected to study and review. Arthur Wilson, of the Standard Oil Co. of California, has submitted the code to operators, and after he has reviewed the outlined code it is expected a revised draft will be presented for approval at the mid-year sessions of the division at Tulsa, June 1, 2 and 3.

Other proposals to be presented at the June meeting include a code on care and use of cold drawn working barrel pumps similar to the existing code on care and use of liner type pumps. L. A. Ogden, chairman of the Mid-Continent district subcommittee, has prepared a tentative draft of the code, and it has been submitted to members of the committee on standardization of pumping equipment. An addition to the code recommending that A.P.I. sucker rod thread protectors now being supplied by manufacturers should be saved and used wherever rods are laid down, stored or transported, will be presented at the meeting.

RUMANIAN OUTPUT UP

NEW YORK, May 23.—Production of crude petroleum in Rumania during March aggregated 530,000 tons, as compared with 500,000 tons during the previous month.

New South Mississippi-Alabama Play

Preliminary Surveys Being Made in Coastal Region. Two Tests North of Mobile. Arkansas Wildcats Discouraging. Shelby County Busy

By J. R. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., May 23.—Reports of preliminary surveys on large blocks of acreage in South Mississippi's coastal region and the adjacent territory in southwestern Alabama indicates that this area is in for a good wildcatting play during the remainder of the year. Much activity is in evidence on the Jackson fault in Clarke County, Alabama, with one test drilling, and a rig is being moved on location in Washington County to the southwest bordering the Mississippi state line. Both of these wildcat tests are about 75 miles north of the city of Mobile.

In Washington County a geophysical company is making a survey northeastwardly through the county from Fruitdale to Frankville, up the south flank of the Hatchetigbee anticline. Approximately 200,000 acres is reported taken over on a six months' exploration clause for the firm of Fisher & Lowery. The survey is using three machines and making nine locations per day, one-half mile apart. It is estimated that it will take from 60 to 90 days to complete the survey.

Clarke County, adjoining Washington County on the northeast, has quite a play developing on the Jackson fault in the vicinity of the Tidal Oil Co. and others' No. 1 Hobson, Section 33-6n-2e. The test topped the chalk at 801 feet with the base at 1,340 feet, and at the present writing is drilling in red shale at 2,100 feet. An attempted drill stem test around the 2,000-foot level failed, and the crew was unable to recover several cores from a likely looking sand. Up in Lamar County, northwestern Alabama, the De Soto Oil & Gas Corp. (formerly Vernon Oil & Gas Corp.) is drilling in sandy shale at 1,465 feet on its No. 1 Gardner, Section 22-15s-16w. It is reported that the rotary rig will be moved from this test around the 1,500-foot level and cable tools installed to completion.

In Hancock County, on the Mississippi Gulf Coast, a geophysicist has prepared a favorable report on acreage in the vicinity of Heron Bay and Point Clear, Mississippi. The survey was made for the Weston Lumber Co. and this company has furnished 5,000 acres of a 20,000-acre block assembled. The block is solid and centers around Section 30, Townships 9 and 10s, Ranges 14 and 15w. The leases were obtained for five years with rentals of from 25 cents to $1 per acre. A 90-day drilling clause from date with not more than 60 days elapsing between the completion of one well and the commencement of another is also included in the contract. A wildcat in Stone County, the Hercules Sulphur Exploration Syndicate's No. 2 Lang, Section 28-3s-11w, reports encountering 21 feet of likely looking sand from 1,971-92 feet. Arrangements are being made to set 6⅝-inch casing for a test.

Five Completions

This division had its second successive week without reporting a completed oil well, there being only five completions turned in for the past week consisting of four dry holes and one gas well. The Rankin County area of the Jackson Field of Mississippi came through with a good gasser with the completion of Meredith & Smith's No. 2 Strawder in Section 12-5n-1e. The well had an estimated flow of 45,000,000 feet of dry gas from the chalk at 2,374 feet. In the Hinds County area of this field, McGuire and others' No. 1 Spring Lake, Section 11-5n-1e, tested 2,000 feet of brackish water at 2,442 feet, and the test will be deepened or an effort made to cut off the water from the present depth. A wildcat in Panola County, East Texas, G. A. Davidson's No. 1 Latham, William Rich Survey, was dry and abandoned at 2,685 feet. The test is 8 miles southwest of Carthage in the southern part of the county.

North Louisiana

North Louisiana had a dull week, reporting three dry holes, although several wells in the Zwolle Field are standing practically full of oil and will be put on the pump. The area around Zwolle furnished two of the dry holes, Hudson & Byrd's No. 1 Walden, Section 26-8-11, being abandoned at 2,606 feet, and The Texas Company's No. 2-B Grauque, Section 10-7-13, was dry and abandoned at 2,480 feet. The latter test was a semi-wildcat on the southwestern flank.

A rather keen disappointment was the result of testing J. K. Wadley's No. 1 Matthews, Section 11-23-9, in the northern part of Webster Parish. The test failed to get the anticipated oil sand around the 2,800-foot level and now stands with several hundred feet of salt water at a total depth of 2,816 feet. A few gallons of oil was bailed from the hole at 2,801 feet and a core at the present depth revealed a sandy lime formation carrying oil, but salt water intruded and the test will probably be abandoned. Red Hawk Oil Co.'s No. 1 Matthews, 200 feet north of the present test, was drilled during last year and cored a good looking sandy shale at 2,797 feet with a good show of oil. The casing collapsed in this well while bailing and it was junked and abandoned. The show is coming from the Blossom sand which produces in the Haynesville Field about 5 miles east from the wildcats.

Louisiana Wildcats

Although none of the wildcats in North Louisiana developed anything of interest during the week, several of them in De Soto, Grant, Sabine and Natchitoches Parishes are being closely watched. De Soto has four active rigs as follows: Donley & Chastain's No. 1 Smith, Section 31-14-15, is reaming at 1,100 feet to the bottom of the old total depth of 2,295 feet. The well, located in the northern part of the parish, near the southern line of Caddo Parish, was drilled to the latter depth last year by the Keachie Oil & Gas Co. where it was abandoned. Frank Rudderseale and others' No. 3 Nabors, Section 6-12-11, has spudded in and drilling at 235 feet. South of Grand Cane and the recently abandoned Warren & Craig test, the Standard Oil Co. of Louisiana and the Pelican Natural Gas Co., drilling a joint wildcat on a 6,000-acre block, have rigged up and are ready to spud in on their No. 1 Sutherlin, Section 19-12-14. In the southern part of the parish, Walters Nicholson's No. 1 Guy, Section 3-11-13, is drilling in gumbo at 2,130 feet after going out of the chalk at 1,845 feet.

A wildcat near the Urania Field in Grant Parish is testing at 1,583 feet. The Security Petroleum Co.'s No. 1 Swope estate, Section 16-9-1e, set 6-inch at 1,540 feet after encountering a good show in broken lime and shale. H. W. Perritt's No. 1 Cook, Section 3-8-8, Natchitoches Parish had a small show of gas at 863 feet but passed it up without testing and is now drilling at 1,957 feet. The same operators' No. 2 Brown, Natchitoches Parish, is shut down at 964 feet.

In the northern part of Sabine Parish, south of Pleasant Hill, Frank Foster, Inc., failed to encounter an oil bearing sand underlying the gas at 3,358 feet in his No. 1 Stevens, Section 20-9-11. The well was cored to 3,701 feet with barren results and stands temporarily abandoned at that depth with the probability that it will be deepened to some of the Trinity horizons at some future time. A few miles northeast of this test, J. M. Bridges' No. 1 Armstrong, Section 28-10-11, has not had any encouraging results with the total depth at 3,206 feet.

Arkansas Wildcats

The Arkansas wildcats all had discouraging results from tests during the past week. D. S. Brooks' No. 1 Crossett Lumber Co., Section 31-15s-6w, Ashley County, topped the Nacatoch at 3,155 feet but a drill stem test at this depth developed four fourbles of mud with a small show of oil. The test is deepening and is shut down for water at 3,170 feet.

In the gas district of Crawford County, the Ozark Natural Gas Co.'s No. 1 Jones, Section 32-9-31, tested 500,000 feet of gas at 1,409 feet and another good show of gas at 1,814 feet, but passed up both and is now drilling at 1,975 feet. The Pigeon Hill Oil Co., in Union County, tested salt water at the top of the Graves sand from 2,762-68 feet in its No. 1 Union Sawmill Co., Section 19-17-12. The crew is now drilling in sand at 2,806 feet. In the same county, the Southern Production Co.'s No. 1 Wingfield, Section 16-19-15, is coring in broken lime at 4,039 feet.

East Texas Border

Shelby County was the most active area of the border East Texas counties during the last seven-day period with drilling operations as follows: E. L. Chapman's No. 2 Pickering Lumber Co., D. S. Height Survey, drilling in shale at 1,548 feet; Ridgeway and others' No. 1 Polley, Domingo Gonzales Survey, drilling at 1,335 feet. Western World's No. 1 Foster-Billingsly, Jeremiah Bowlin Survey, northwest of Timpson, is drilling at 2,710 feet. Two tests in the shallow production area in the eastern part of Shelby are nearing the pay depth. Sedberry and others' No. 1 Pickering Lumber Co., Jane Stoddard Survey, is coring at 1,402 feet, and Wray & Dunbar's No. 1 Hayden, D. T. F. Yordt Survey, is temporarily shut down waiting on orders after encountering a good show of gas at 1,534 feet. The Oil News Publishing Co. recently completed a small pumper in the area around the 1,500-foot level.

Daily Average Runs

There was only a slight decrease in the daily average runs from the fields of North Louisiana and Arkansas during the past week, a net daily decline of only 110 bbls. from both states. The daily average runs from the several pools were:

NORTH LOUISIANA	
Caddo, light	5,460
Caddo, heavy	2,075
Cotton Valley	575
De Soto and Red River	1,970
Elm Grove	225
Haynesville	4,420
Holly	295
Homer	2,890
Pleasant Hill	300
Sarepta-Carterville	800
Urania	3,620
Zwolle	6,800
Total North Louisiana	29,430
Total previous week	29,520
Decrease	90
ARKANSAS	
Champagnolle	1,895
El Dorado	3,050
Lisbon	505
Nevada	1,120
Smackover, light	2,930
Smackover, heavy	23,620
Stephens	635
Urbana	610
Total Arkansas	34,365
Total previous week	34,385
Decrease	20
Total both states	63,795
Total previous week	63,905
Decrease	110

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

AVOYLLES PARISH

Company, well, farm name, section and block— Remarks:
Stauffer & Eshleman's No. 1 Caruth, Sec. 40-1n-7e.....Derrick.

BOSSIER PARISH

Dr. W. N. Hankins' No. 1 Newell, 300 ft. S and W, NE cor., Sec. 12-19-11 .....T.A. 1,895 ft; rigging up on new hole.

CADDO PARISH

Pyramid O. & G. Co.'s No. 2 Beard, Sec. 9-8-16, 660 ft. S, 1,980 ft. W, NE cor. Sec. .....Set 6⅝-in. 2,750 ft.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4 .....Drlg. black shale 3,300 ft.
Hudson et al's No. 1 Burton, Sec. 35-12-2e .....S.D. 2,950 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6.....T.A. 3,097 ft.

DE SOTO PARISH

Coker et al's No. 1 Boone, 200 ft. N and W, SE cor. SW NW, Sec. 12-10-11 .....Derrick.
Donley & Chastain's No. 1 H. Smith, 325 ft. W, 600 ft. N, SE cor., Sec. 31-14-15 .....Reaming 1,100 ft; T.D. 2,295 ft.
S. A. Guy's No. 1 Dowling, 469 ft. E, 382 ft. S, NW cor. NE, Sec. 31-14-14 .....Deepening old hole 1,354 ft.
E. T. Oakes' No. 1 R. H. Bryant et al, 200 ft. N and W, SE cor. NE NW, Sec. 30-12-15.....S.D. 3,450 ft.
A. R. Smith's No. 1 Horn, Sec. 16-12-16, NE cor. Sec. ..Rigged up and S.D.
DeSoto Dev. Co.'s No. 1 Nickey, Sec. 7-13-12.....Derrick.
Rudesealе et al's No. 2 Nabors, Sec. 6-12-11 .....Drlg. 150 ft.
Standard Oil Co. and Pelican Nat. Gas Co.'s No. 1 Sutherlin, 320 ft. N, 260 ft. W, SE cor. SW, Sec. 19-12-14 .....Rigging up.
Walters-Nicholson, tr.'s No. 1 Jim Guy, Sec. 3-11-13....Drlg. 2,130 ft.

GRANT PARISH

Security Pet. Corp.'s No. 1 Swope est., Sec. 16-9-1e, 1,698 ft. N, 220 ft. E, SW cor. Sec. .....Testing 1,583 ft.
O. Robichaux's No. 1 T. M. Bradford, 1,870 ft. E, 314 ft. S, NW cor., Sec. 16-9n-1e .....Location.

NATCHITOCHES PARISH

W. M. Coates' No. 1 Ross Olive, Sec. 10-9-10, 660 ft. S and E from cen. of Sec. .....Rigging up.
Dr. H. S. Gerson's No. 1 Smith, Sec. 11-10-8, 2,000 ft. N, NE cor. of irregular Sec. 10, in Sec. 11.....S.D. for D.S. 1,200 ft.
R. A. Keaton's No. 1 Stephens, Sec. 25-10-6, 320 ft. N and W, SE cor. NW NW.....S.D. 1,500 ft.
H. W. Perritt's No. 1 Cook, 165 ft. E, 105 ft. N, SW cor. NE SW, Sec. 3-8-9..... Drlg. 1,951 ft.

(Continued on Page 68)

Big Increase in East Texas Locations

There Were 183 During Week, With 174 Completions. Total Wells Now 5,700. Pressure Tests Against Increased Allowable

By L. E. Bredberg

DALLAS, Tex., May 23.—A new high was reached in the number of locations staked in East Texas during the week, the third highest number during the history of the field, and the highest number since the week of October 8, 1931, when activities were rampant and the field was producing 1,000,000 bbls. per day. The new high reached 183, 6 of these, however, being wildcat locations staked outside of the field, and in counties adjacent to the producing counties. The majority of them were made by major companies, as was also the case in the number of completions, the independents having drilled up most of their acreage, especially the smaller tracts, but the majors having a drilling campaign now on their hands to reach as small a number of acres per well percentage as the independents have established.

Sixty-four of the new locations were staked in North Gregg, and 37 were in the southern part of the county. Forty-two were staked in south Rusk. Only one was staked in Cherokee County, the last county to be added to the producing area. Bowie County, Henderson, Marion and Upshur Counties each received wildcat locations, while Ellis County received locations for two wildcat tests. There were 174 wells completed in the district, the second largest number completed in any one week.

Must Reduce Allowable

The Railroad Commission has not yet announced what the new allowable per well will be after June 1, but it will have to be cut materially to hold production to around 325,000 bbls. per day for the field. There are 5,700 completed wells in the field at the present time, and with around 130 completed each week it is difficult to hold production to the set figure mentioned above, unless a substantial curtailment is made every two weeks. For the 24-hour period ending 7 a. m. May 21, there were 5,662 producers in the field, 329,942 bbls. were reported for that period, but 121 wells failed to report. Forty-three wells reported no production. Pipe line runs for the same period were 334,772 bbls.

The East Texas pipe line committee was to hold a meeting at Dallas on May 24 to discuss the pipe line situation in the district, and connecting to unconnected wells, but the meeting has been postponed until after June 1 to see what the new per well allowable is to be. The committee will be in a better position after that to determine just what can be done in regard to connecting the wells, and what future action might be taken. The vast number of new completions is taxing the pipe line companies, and furnishes a problem for the committee, except in the case where the producing companies have affiliate purchasing or pipe line companies in the field to give them assistance. The committee endeavors to connect with the independent producers' wells, thereby eliminating the possibility of distress oil being thrown on the market and weakening the price structure which has been holding steady for the past few weeks since the committee went into action to prevent such an occurrence.

Daily Distribution

Daily average runs by main lines in East Texas for week ending May 19 were: 336,000 bbls.; to local refineries, 16,479 bbls.; shipped by tank cars, 210 bbls. Daily average distribution for week was 352,689 bbls.; daily average production, 338,098 bbls.; daily average from storage, 14,590 bbls.

Flow Tests Near Overton

A well belonging to the Overton Refining Co. and located on its Jones lease in the F. Cordova Survey, near Overton in Rusk County, was tested during the week, some valuable facts having been ascertained by six-hour tests which flowed at the rate of 75 bbls. per day, at the rate of 250 bbls. per day, 500, 750, 900 and 1,250 bbls. daily, then tested for four hours at the rate of 1,500 bbls. daily, 2,000 and 2,500 bbls. daily. One-hour tests were later made allowing the well to flow at the rate of 3,750 and 5,000 bbls. each. It was found that the gas-oil ratio was lowest at the 750-bbl. per day rate, but pressure tests on offset wells showed these pressures to drop less when the well was held to only 75 bbls. allowable. Federal Judge Randolph Bryant of Tyler authorized these tests, and Hudnall and Pirtle, consultant geologists and petroleum engineers of Tyler, made the tests.

The decline in bottom hole pressures on offset tests is held to be indicative of what can be expected in the event wells are allowed to flow more than their present daily limit. Regardless of the gas-oil ratio showing better with the well flowing at the rate of 750 bbls. per day, the drop in pressure in offset wells will be offered as good and substantial evidence against an increase in the allowable, at the federal court hearing at Houston on May 30 when the Railroad Commission's right to prorate the output of the East Texas wells will be challenged. Another well is to be tested this week to verify or refute testimony given by another operator who formerly tested a well in Gregg County and stated that the gas-oil ratio showed 462 feet to the barrel of oil when his well was flowed at the rate of 720 bbls. per day. Three other producers have permission to test wells on their properties before the federal hearing; permission formerly granted to others has been withdrawn.

The companies which had gained permission to run tests on their wells have been held back from making these tests because of lack of pipe line or other outlet for the amount of oil which would necessarily have been produced during the time allotted to the tests, but the Overton Refining Co. ran its production to its refinery at Overton and thereby solved its own individual problem of disposing of the excess production. Royalty owners prevented two operators from testing wells on their properties, even threatening force if the operators carried out their plans for opening the wells to test them.

Fall in Pressure

If tubing pressures on wells offsetting the Overton Refining Co.'s well really fell between 35 and 50 pounds as reported, when the test was made, the question is, "Where would pressures fall, and how would wells react in the field if all of the 5,700 producers were allowed to flow open, or at a greater allowable than now set by the Railroad Commission?" Many are of the opinion that hundreds of them would have to be put on the pump immediately. Pressures have been steadily declining, engineers stating that it is now falling at the rate from 9 to 10 pounds per month, more wells going on the beam in the lower pressure areas, which are on the eastern side of the field, particularly in the first discovered Joiner area where many wells have been pumping for months, some of them requiring pumping as soon as completed. Some newly completed wells on the east side of the Joiner area have had to be put on the beam in order to make their daily allowable, and a few wells on the west edge also required pumping equipment when salt water drowned out the oil flow.

One well, H. E. Wren and others' No. 1 King, in the Chisum Survey, on the extreme western edge of the Kilgore area, Gregg County, was abandoned this week when plugging back failed to shut off, or cut down the water flow. Total depth of this well is 3,754 feet, with an elevation of 424 feet. Top of the sand was logged at 3,738 feet. It is in a salt water producing area.

Kilgore Extended East

Production on the east edge of the Kilgore area, Rusk County, was bulged farther to the east this week when the Solar Drilling Co.'s No. 1 H. H. Leech cored sand from 3,505-26 feet assuring almost a half mile extension for this immediate area. It was shut down at 3,543 feet to cement casing, which will be a string of 3-inch pipe as this company uses a small rotary outfit, sets smaller casing than used in the general run of wells, and also uses smaller tapered tubing.

Sabine River Bidders

The 11 highest bidders on the eight Sabine River bed tracts, Gregg County, are: Rhodes Drilling Co., Massengill and Belew, Whitmore & Co., Blue Star Oil Co., Canadian Oil Production Co., K. R. March, Earle Calloway of Tyler, Anderson-Prichard Oil Corp., Dean Flitch, Karl Flitch and P. N. Rawson. If these bidders acquired the tracts it will mean the drilling of many wells, both in the river bed, and also offsets on both sides of the river, thereby adding to the present large number of activities in the district. It is not known when the lease board will announce the winning bidders and sign contracts on the tracts, and possibly some delay will be experienced before the deals are consummated. All eight tracts are within the producing area of the county, but the tract farthest to the east, and the two west end tracts are the least desired of the eight, the latter two located in the water area. Engineers of the Railroad Commission have estimated that the State should receive around $3,285,725 from the development of the 780 acres in the tracts.

Upshur Wildcat

An interesting wildcat has been spudded northwest of Gilmer in Upshur County but is shut down at present, to resume drilling later in the week. This test is Snuggs and Mannas' No. 1 J. N. Pool, in the S. J. Pounds Survey, and is located on a 1,600-acre block, part of which was obtained from the Amerada Petroleum Corp. which drilled a dry hole on its Kelsey block, approximately 2¼ miles southeast of the present new location. The location is approximately 1½ miles west of Potter, Tarr and Gillette's No. 1 Irions in the D. B. Lucas Survey, which was abandoned at a total depth of 3,942 feet. It had no showings of oil or gas. The Amerada dry hole went to 6,153 feet before being written off as a "duster."

Tarr and others are preparing to drill another test in this area, to be located in the Williams McFadden Survey. Both new tests will go to the Georgetown lime.

Smith County

Droppleman and Bunte's No. 1 Atkinson in the Calloway Dean Survey, interesting wildcat test in Smith County, has been bailed down showing no oil or gas, and will probably be abandoned at 4,030 feet.

Marion County

Harrold and others have staked location on the Hussey farm in the Lockhart Survey, offsetting an abandoned test formerly drilled by Trammell and others and which had some oil and gas showings. The new test is approximately 3½ miles west of Jefferson, in Marion County, and is a rank wildcat drilling in hopes of picking up a heavier saturated sand than found in the abandoned offset.

M. E. Nash, trustee, has taken over the old Pittley block centering in the George L. Bledsoe Survey, in the west part of the county, and will drill to 3,300 feet.

A. D. Morton of the Ryan Consolidated Oil Co. is preparing to start a test in the northwest corner of Harrison County in the area where Meadows and Puterbaugh recently completed a dry hole.

J. E. Crosbie of Tulsa has taken over 53 acres from J. W. Olvey near the Leonard test in Morris County and will start a test immediately.

Morris County

Buchanan and Burkhalter's No. 1 Staggers is another wildcat which will probably be abandoned soon. It is now shut down at 3,550 feet after bailing down to 3,000 feet with no showings of oil. It is in the J. D. Nelson Survey, Morris County.

Red River County

L. G. Priest is preparing to drill a test on his block centering in the Burkham Survey 2 miles east of English in the northeast part of Red River County.

Franklin County

Leases have been taken for a block in the Thomas Hill, I. B. Cherry, H. Clifton, A. H. Lanier, Thomas S. Chastain, J. B. Nations, Arthur Miller and G. A. Miller Surveys, Franklin County, and a tentative location has been made in the G. A. Miller Survey. It will be drilled to the Woodbine sand.

Bell and McHenry have secured 8,000 acres on the Hopkins-Hunt County line, consideration to be a Woodbine sand test which will be drilled by the Joyce Oil Co., California operators. The block lies in the D. Holbrook, William Birdwell, Z. Birdwell, George Birdwell and E. P. Gaines Survey.

Delta County

W. G. Lemmon of Dallas is working on a 4,500-acre block north of Charlestown in the east part of Delta County, and will drill a wildcat test.

J. A. Collition is taking a block lying south of Pure Oil Co.'s Summerfield block in Cherokee County and will drill a test in 60 days. The block centers in the A. Gray and J. D. Hamilton Surveys.

Leon County

The Shell Petroleum Corp. has asked for bids from drilling contractors for a 5,200-foot test on its Centerville block in Leon County, and is to begin operations on a location within the next 45 days.

There are approximately 185 pumping wells in the East Texas district, which is but a small percentage of the 5,700 completed wells in the field, the numbers increasing but slowly.

COMPLETIONS IN EAST TEXAS

Cherokee County

Mid-Kansas Oil & Gas Co.'s No. 9 M. M. Cross, top sand 3,657 feet, initial production 10 bbls. open by heads, total depth 3,678 feet.

Dallas County

Long Creek Development Co.'s No. 1 T. J. Lupton, temporarily abandoned, total depth 650 feet.

Ellis County

Carl Brooks' No. 1 C. W. Golliday, dry and abandoned, total depth 2,487 feet.

North Gregg County

Amerada Petroleum Corp.'s No. 4 E. Burnside, top sand 3,515 feet, initial production 96 bbls. per hour through three-fourths inch tubing choke, total depth 3,543 feet. Arkansas Fuel Oil Co.'s No. 1-A W. E. Bolton, top sand 3,492 feet, initial production 35 bbls. in 15 minutes through 1-inch tubing choke, total depth 3,515 feet; No. 3-A P. D. Harrison, top sand 3,582 feet, initial production 47 bbls. in 15 minutes through 1-inch tubing choke,

total depth 3,597 feet; No. 3 Castleberry, location abandoned; No. 1-A Taylor Lee, top sand 3,530 feet, initial production 27 bbls. in 15 minutes through 1-inch tubing choke, total depth 3,549 feet. Atlantic Oil & Production Co.'s No. 3 A. V. Bacle, top sand 3,653 feet, initial production 20 bbls. per hour through tapered tubing, total depth 3,675 feet. Atlantic and Wadley's No. 5 Joe Bender, top sand 3,599 feet, initial production 22 bbls. per hour through tapered tubing, total depth 3,633 feet. Atlantic Oil & Production Co.'s No. 4 T. B. Harris, top sand 3,542 feet, initial production 128 bbls. per hour through 2½-inch tubing, total depth 3,565 feet; No. 3 Moyer, top sand 3,558 feet, initial production 22 bbls. per hour through tapered tubing, total depth 3,584 feet; No. 1 W. Pritchard, top sand 3,495 feet, initial production 200 bbls. per hour through 2½-inch tubing choke, total depth 3,525 feet. Atlantic and Wadley's No. 6 Turner, top sand 3,498 feet, initial production 22 bbls. per hour through tubing, total depth 3,559 feet. Atlantic Oil & Production Co.'s No. 5 Hays, top sand 3,484 feet, initial production 22 bbls. per hour through tapered tubing, total depth 3,543 feet.

Bishop Oil Co.'s No. 3 E. G. Richey, top sand 3,563 feet, initial production 59 bbls. in 45 minutes through 1-inch tubing choke, total depth 3,605 feet. Cal-Pet Corp.'s No. 3 Clements, top sand 3,702 feet, initial production 31 bbls. in 15 minutes through 2-inch tubing, total depth 3,720 feet. Champlin and Bass' No. 3 G. S. Mattox, top sand 3,601 feet, initial production 61 bbls. per day through various chokes, total depth 3,645 feet. Columbia Oil & Gas Co.'s No. 2 Harley, top sand 3,560 feet, initial production 38 bbls. per hour through 1½-inch tubing choke, total depth 3,583 feet. Cox and Hamon's No. 7 fee, top sand 3,452 feet, initial production 40 bbls. in 12 minutes through open 2-inch tubing, total depth 3,550 feet; No. 8 fee, top sand 3,452 feet, initial production 32 bbls. in 15 minutes through open tubing, total depth 3,550 feet; No. 1 Canadian Rodden, top sand 3,612 feet, initial production 30 bbls. in 10 minutes through open 2-inch tubing, total depth 3,620 feet. Cranfill and Reynolds' No. 4 J. T. Rembert, top sand 3,469 feet, initial production 59 bbls. per day through various chokes, total depth 3,500 feet.

Danciger Oil & Refining Co.'s No. 1 Mattox, top sand 3,607 feet, initial production 72 bbls. per day through various chokes, total depth 3,629 feet. Devonian Oil Co.'s No. 5 Ingram, top sand 3,523 feet, initial production 120 bbls. per hour through three-fourths inch tubing choke, total depth 3,564 feet.

S. A. Guiberson and others' No. 1 J. M. Christian, top sand 3,484 feet, initial production 38 bbls. in one-quarter hour through open tubing, total depth 3,634 feet. Gulf Production Co.'s No. 3 A. V. Bacle, top sand 3,587 feet, initial production 80 bbls. per hour through three-quarters-inch tubing choke, total depth 3,609 feet; No. 8 S. C. Fishburn, top sand 3,510 feet, initial production 90 bbls. per hour through three-quarters-inch tubing choke, total depth 3,538 feet; No. 9 S. C. Fishburn, top sand 3,504 feet, initial production 100 bbls. per hour through tubing, total depth 3,540 feet; No. 8 M. O. Sheppard, top sand 3,512 feet, initial production 80 bbls. per hour through three-quarters-inch tubing choke, total depth 3,540 feet. H. B. & W. Oil Co.'s No. 3 Gray, top sand 3,565 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,613 feet.

Humble Oil & Refining Co.'s No. 9 T. B. Harris, top sand 3,506 feet, initial production 90 bbls. per hour through three-quarters-inch tubing choke, total depth 3,576 feet; No. 9 Holland, top sand 3,615 feet, initial production 87 bbls. per hour through three-quarters-inch tubing choke, total depth 3,637 feet; No. 3 M. Killingsworth, top sand 3,608 feet, initial production 27 bbls. in one-quarter hour through three-quarters-inch tubing choke, total depth 3,671 feet. Kewanee Oil Co.'s No. 10 T.&P.R.R., top sand 3,535 feet, initial production 52 bbls. in one-quarter hour, total depth 3,583 feet.

Lucey Petroleum Co.'s No. 4 R. Christian, top sand 3,600 feet, initial production 65 bbls. in one-half hour through 1-inch tubing choke, total depth 3,645 feet.

Magnolia Petroleum Co.'s No. 3 Jim Allen, top sand 3,662 feet, initial production 188 bbls. per hour through 2½-inch tubing choke, total depth 3,690 feet; No. 1 J. W. Stone, top sand 3,610 feet, initial production 140 bbls. per hour through 2-inch tubing choke, total depth 3,665 feet; No. 6 Zeigler, top sand 3,448 feet, initial production 156 bbls. per hour through open 2-inch tubing choke, total depth 3,645 feet. Manzeil Oil Co.'s No. 2 J. R. Tennery, top sand 3,647 feet, initial production 48 bbls. in one-quarter hour through open 2-inch tubing choke, total depth 3,663 feet. Margay Oil Co.'s No. 4 R. Corbin, top sand 3,614 feet, initial production 32 bbls. in one-quarter hour through 1-inch tubing choke, total depth 3,636 feet. McDonald and Campbell's No. 2 Harrison, top sand 3,540 feet, initial production 30 bbls. in one-quarter hour through 1-inch tubing choke, total depth 3,590 feet.

Peyton Brothers' No. 3 J. M. Christian, top sand 3,572 feet, initial production 61 bbls. per hour through 1-inch tubing choke, total depth 3,605 feet. P. & G. Production Co.'s No. 1 Sam Kay, top sand 3,631 feet, initial production 59 bbls. per day through various chokes, total depth 3,675 feet. Red Star Oil Co.'s No. 2 W. D. Anderson, top sand 3,581 feet, initial production 65 bbls. in 45 minutes through 1-inch tubing choke, total depth 3,626 feet. Sabinas Oil Co.'s No. 3-B J. W. Falvey, top sand 3,714 feet, initial production 300 bbls. per hour through 6⅝-inch casing open, total depth 3,726 feet.

Shasta Oil Co.'s No. 4-A T. D. Campbell, top sand 3,597 feet, initial production 75 bbls. per hour through three-quarters-inch tubing choke, total depth 3,633 feet. Shell Petroleum Corp.'s No. 3 Boston Moore, top sand 3,539 feet, initial production 25 bbls. per hour through tapered tubing, total depth 3,599 feet. Jay Simmons and others' No. 1 A. V. Bacle, top sand 3,618 feet, initial production 63 bbls. in 45 minutes through 1-inch tubing choke, total depth 3,633 feet. Stanolind and Simms Oil Co,'s No. 3 Boles, top sand 3,531 feet, initial production 50 bbls. in one-quarter hour through open tubing, total depth 3,602 feet. Stanolind and Simms and others' No. 1 Albright, top sand 3,536 feet, initial production 50 bbls. in one-quarter hour through 2½-inch tubing, total depth 3,642 feet. Stanolind and others' No. 4-A J. J. Flewellen, top sand 3,670 feet, initial production 45 bbls. in one-half hour through 2½-inch tubing, total depth 3,686 feet. Simms and Stanolind's No. 9-B Flewellen, top sand 3,682 feet, initial production 105 bbls. per hour through open 2-inch tubing, total depth 3,690 feet. Simms and Russ' No. 4 J. J. Flewellen, top sand 3,690 feet, initial production 80 bbls. per hour through open tubing, total depth 3,700 feet. Sun Oil Co.'s No. 5 J. T. Loden, top sand 3,693 feet, initial production 42 bbls. per hour through tapered tubing, total depth 3,692 feet.

The Texas Company's No. 3 J. S. Boles, top sand 3,522 feet, initial production 48 bbls. in one-quarter hour through 2½-inch tubing choke, total depth 3,596 feet. Tidal Oil Co.'s No. 5 Davis, top sand 3,535 feet, initial production 24 bbls. in 10 minutes through open tubing, total depth 3,565 feet; No. 6 Davis, top sand 3,528 feet, initial production 189 bbls. per hour through open tubing, total depth 3,562 feet; No. 6 Lake Devernia, top sand 3,494 feet, initial production 25 bbls. in 10 minutes through 2-inch open tubing, total depth 3,534 feet; No. 7 Lake Devernia, top sand 3,507 feet, initial production 90 bbls. in one-half hour through open 2-inch tubing, total depth 3,545 feet.

Merrick, Inc.'s No. 2 W. R. Nicholson, top sand 3,657 feet, initial production 40 bbls. per hour through one-half-inch tubing choke, total depth 3,677 feet. Yount Lee Oil Co.'s No. 4 Adrain McCrairy, top sand 3,463 feet, initial production 90 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,483 feet; No. 6-B J. C. McKinley, top sand 3,645 feet, initial production 81 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,665 feet.

South Gregg County

Barnsdall Oil Co.'s No. 2 Douglas, top sand 3,676 feet, initial production 20 bbls. in one-quarter hour through 1-inch tubing choke, total depth 3,680 feet. Will Brown's No. 1 E. Choice, top sand 3,533 feet, initial production 40 bbls. in one-half hour through open 2½-inch tubing, total depth 3,630 feet. Byrd-Frost Oil Co.'s No. 7 M. B. Hughey, top sand 3,550 feet, initial production 59 bbls. per day pinched, total depth 3,630 feet. Canadian Oil & Production Co.'s No. 1 Hilburn, top sand 3,676 feet, initial production 60 bbls. per hour through open tubing, total depth 3,686 feet. Carroll and Blain's No. 1 Griffin, top sand 3,543 feet, initial production 40 bbls. in one-half hour through 1-inch tubing choke, total depth 3,572 feet. Galvez Oil Co.'s No. 2 M. T. Cole, top sand 3,535 feet, initial production 90 bbls. per hour through three-quarters-inch tubing choke, total depth 3,554 feet.

Gulf Production Co.'s No. 5 M. Charles, top sand 3,606 feet, initial production 72 bbls. per hour through three-quarters-inch tubing choke, total depth 3,613 feet; No. 4 Clayton, top sand 3,575 feet, initial production 95 bbls. per hour through three-quarters-inch tubing choke, total depth 3,603 feet; No. 6 M. T. Cole, top sand 3,536 feet, initial production 75 bbls. per hour through three-quarters-inch tubing choke, total depth 3,543 feet; No. 8 Culver, top sand 3,499 feet, initial production 60 bbls. per hour through three-quarters-inch tubing choke, total depth 3,519 feet; No. 20 Hilburn, top sand 3,520 feet, initial production 50 bbls. per hour through three-quarters-inch tubing choke, total depth 3,537 feet; No. 7 Muckelroy, top sand 3,554 feet, initial production 50 bbls. per hour through three-quarters-inch tubing choke, total depth 3,564 feet; No. 4 C. Strong, top sand 3,736 feet, initial production 82 bbls. per hour through three-quarters-inch tubing choke, total depth 3,742 feet; No. 3 E. L. Walker, top sand 3,529 feet, initial production 60 bbls. per hour through three-quarters-inch tubing, total depth 3,550 feet.

Hughes and others' No. 1 Longley and others, top sand 3,581 feet, initial production 75 bbls. per hour through three-quarters-inch tubing choke, total depth 3,686 feet. T. D. Humphries' No. 6 Spear, top sand 3,540 feet, initial production 40 bbls. in one-half hour through 1-inch tubing choke, total depth 3,592 feet. Jones and O'Brien's No. 5 Hughey Ross, top sand 3,518 feet, initial production 30 bbls. in one-quarter hour through three-quarters-inch tubing choke, total depth 3,584 feet; No. 3 J. Lloyd, top sand 3,560 feet, initial production 45 bbls. in one-half hour, total depth 3,602 feet.

Lion Oil & Refining Co.'s No. 2 A. A. King, top sand 3,543 feet, initial production 35 bbls. in one-quarter hour through 1½-inch tubing choke, total depth 3,625 feet. Munn and others' No. 2 I.&G.N. R.R., top sand 3,548 feet, initial production 75 bbls. per hour through three-quarters-inch tubing choke, total depth 3,607 feet; No. 3 I.&G.N.R.R., top sand 3,551 feet, initial production 70 bbls. per hour through three-quarters-inch tubing choke, total depth 3,606 feet; No. 6 I.&G. N.R.R., top sand 3,532 feet, initial production 40 bbls. in one-half hour through three-quarters-inch tubing choke, total depth 3,590 feet. Sam P. Shelbourn's No. 3 L. Martin, top sand 3,712 feet, initial production 61 bbls. per day pinched, total depth 3,722 feet. Shell Petroleum Corp.'s No. 3 Williams and Bonner, top sand 3,553 feet, initial production 15 bbls. in one-half hour through tapered tubing, total depth 3,617 feet.

Sinclair Prairie Oil Co.'s No. 14-A A. A. King, top sand 3,480 feet, initial production 55 bbls. in one-quarter hour through open tubing, total depth 3,515 feet; No. 10-B A. A. King, top sand 3,437 feet, initial production 55 bbls. in one-quarter hour through open tubing, total depth 3,469 feet; No. 17-B A. A. King, top sand 3,467 feet, initial production 50 bbls. in one-quarter hour through open tubing, total depth 3,495 feet. Sun Oil Co.'s No. 4 Cole, top sand 3,527 feet, initial production 49 bbls. per hour through tapered tubing, total depth 3,550 feet; No. 2 Rottner, top sand 3,642 feet, initial production 47 bbls. per hour through tapered tubipg, total depth 3,670 feet; No. 2 M. Strong, top sand 3,575 feet, initial production 50 bbls. per hour through tapered tubing, total depth 3,610 feet.

Tidal Oil Co.'s No. 8 Bivens, top sand 3,607 feet, initial production 120 bbls. per hour through open tubing, total depth 3,621 feet. M. K. Towns' No. 1 Griffin Davis, top sand 3,601 feet, initial production 59 bbls. in 45 minutes through 1-inch tubing choke, total depth 3,615 feet. Winston's No. 4 Paul Jones, top sand 3,734 feet, initial production 90 bbls. per hour through open tubing, total depth 3,738 feet. H. E. Wrenn's No. 1 A. A. King, top sand 3,747 feet, initial production tested salt water, dry and abandoned, total depth 3,755 feet.

North Rusk County

Abercrombie and Harrison's No. 8 Cantrell, top sand 3,634 feet, initial production 61 bbls. per hour through 1½-inch tubing choke, total depth 3,661 feet. DeArmon Bros.' No. 4 M. R. King, top sand 3,643 feet, initial production 35 bbls. in one-fourth hour through open tubing, total depth 3,715 feet. Gulf Produc-

(Continued on Page 51)

EAST AND EAST CENTRAL TEXAS WILDCATS

Week Ending May 23

ANDERSON COUNTY

Company, well, farm name, section and block—	Remarks:
Roeser and Pendleton's No. 1 M. A. Davy, 660 ft. from N line and center of E and W lines of tract and survey, P. G. Adams Sur.	Derrick.
C. R. Wilmuth et al's No. 1 N. B. Watson, 500 ft. from W line and 4,850 ft. from N of S line of survey in S½ of 129-ac. tract, M. Main Sur.	T.D. 1,538 ft.

ANGELINA COUNTY

Helburt et al's No. 1 Long Bell Lumber Co., 160 ft. from S line and 200 ft. from E line of Sec. 9, H.&T.B. Sur.	Location.

BOWIE COUNTY

Burnham-Robertson and Greer's No. 1 F. O. Weiss, 350 ft. from N line and 200 ft. from W line of B. H. Williams 50-ac. tract, Jessie Dean Sur.	Drlg. 2,815 ft.
Les Timberlake's No. 1 C. E. McElwee, 250 ft. from S line and 450 ft. from W line of 160-ac. tract, M. A. Poer Sur.	Spudded.

CHEROKEE COUNTY

Bridges and Candler's No. 1 Berryman, center of Berryman tract, H. Kimble Sur.	S.D. 1,000 ft.
Mustang Oil Co.'s No. 1 Decker and Whiteman, east side of W 75 acres of S 150 acres of survey, 3 miles S of Maydelle, F. W. Fulgham Sur.	Drlg. 4,531 ft.
Pilot Oil Co.'s No. 1 Annie Kelley, center of 10-ac. lease, M. De Los Santos Coy Sur.	Bldg. derrick.
William A. Stone's No. 1 J. T. Perkins, 300 ft. from NW cor. of lease, Thomas Stanford Sur., 8 miles S of Ponta	S.D. 60 ft.
Dr. Tubbs et al's No. 1 J. H. Sharp, 330 ft. from N line and 71 ft. from E and W lines of 3⅛-ac. tract, M. De Los Santos Coy Sur.	Drlg. 1,970 ft.
Wilson & Stubbs' No. 1 L. Robert, 450 ft. from S and 150 ft. from W line of lease, J. B. Wolfin Sur.	S.D. 2,035 ft.; will skid derrick.

DELTA COUNTY

Commerce Oil Co.'s No. 1 Ablowich, 150 ft. from S line and 776 ft. from W line of H. D. Jewett 52-ac. tract, E. Chick Sur.	S.D. 3,580 ft.
Joiner et al's No. 1 Blackwell, 800 ft. S and 150 ft. from E lines of 275-ac. tract, Dunnetelle Sur.	Drlg. 2,740 ft.

(Continued on Page 51)

Ten New Locations in Permian Basin

Wildcat in Brewster County and Test in Borden County. Wichita Falls Has 53 Locations. Deepening Operations in Panhandle Area

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., May 23.—There were 10 locations staked in the Permian Basin this week, more signs of increased activity than have been shown in the district for many months. The majority of them were in different producing areas, but a wildcat in Brewster, and one in Borden bring the first activity to these counties in a couple of years.

C. M. (Dad) Joiner of Dallas and C. P. Link have completed a derrick on the McEntire ranch, approximately 8 miles south and east of Alpine, the location being in Section 31, Block 352, W. J. Mitchell Survey, Brewster County, which is in a 53,000-acre block owned jointly by the two men. Several tests have been standing shut down in the county for many months, the owners apparently undecided as to abandoning them at the various depths to which they have been drilled.

Brewster County is one of the wildest of wildcat areas, only a few tests having been drilled in it, and none of them having any showings of oil or gas of interest. The Rio Grande River forms the south and west boundaries for the county, showing how remote it is. It is many miles from production.

Crockett County

Crockett County continues the most active area from a leasing and royalty buying standpoint. The California Co. has recently purchased the Cosden Oil Co.'s old Perner block in the western part of the county, acquiring 10-year leases on approximately 9,300 acres, which include Sections 30, 31, 32, 33, 34, 35, 36, 37, 38, 40, 41, 42, 49 and 50 in Block 2, H.&G.N. Survey and Sections 99 and 200 and the south halves of Sections 8 and 9 in Block 33.

Irion County

Rotary pumps which were formerly damaged by fire on Stanolind Oil & Gas Co.'s No. 1 Williams, Irion County test, which were sent to the factory for repair, have been returned to the location and will soon be in operation again drilling the well from 7,420 feet where it had drilled when fire started on the rig causing considerable damage and a six weeks' shut down. The test is in Section 1,196, T.C.Ry. Survey, and is scheduled to drill to the Ordovician lime from which production is obtained in the nine deep producing wells in the Big Lake Field, Reagan County.

Southern Ward County

Eastland Oil Co. and others' No. 1 Weiss in Section 4, Block 34, H.&T.C. Survey, the best well ever completed in southern Ward County, is receiving connection by the Wickett Pipe Line Co., which will take 75 bbls. per day, the allowable for wells producing in this area. The well produced 352 bbls. the first 17½ hours with tools in the hole. Total depth is 2,361 feet, and top of the main pay is 2,360 feet. The same company has made location for its No. 2 Weiss and No. 3 Weiss, which are both located to the south. Abell Brothers have also made two locations in this section, to the north of the large Weiss producer.

The test drilled on the S. I. Munger ranch in Section 15, Block 31, Township 4n, T.&P. Survey, by the Sal-Ammoniac Production Co., for sal-ammoniac properties, has been abandoned at a total depth of 2,727 feet, failing to contact the sal-ammoniac bearing water for which the test was drilled.

Andrews County

Fuhrman Petroleum Corp.'s No. 1 Boner and others, Section 24, Block 43-A, the second producer in this area, Andrews County, is preparing to run 2½-inch tubing with a packer . It is now cleaning out 50 feet off bottom with the hole caving badly. Water has broken in from above, believed to be through a bad joint of 6-inch casing. The well continues to flow by heads. Total depth of the hole is 4,541 feet, and top of the pay was logged at 4,254 feet. Elevation is 3,196 feet.

Plymouth and Benedum's (Davis) No. 1 J. D. Suggs, Section 3,081, Block 28, H.&T.C. Survey, deep test in Irion County, has sidetracked tools and is now standing at 7,543 feet with tools cemented off. This is also an Ordovician test.

Stanolind Oil & Gas Co.'s No. 1 Massie in Section 47, Block UV, G.C.&S.F. Survey, Crockett County, which is drilling for gas expected around 1,100 feet, is now drilling below 600 feet. This test is being drilled in an effort to pick up enough gas with which to drill an Ordovician test on an adjacent unitized block in which Stanolind and several other companies hold acreage.

Toborg-Tippett Area

Cardinal Oil Co.'s No. 2-G Tippett, located in Section 62, Block 194, G.C.&S.F. Survey, in the shallow Toborg-Tippett area, northwest of the Yates Field, Pecos County, missed the regular shallow pay and is being abandoned at 410 feet. It is one of the few tests drilled in this area which have been abandoned. One well was recently drilled through the shallow pay and picked up a deep pay below 1,300 feet making a fair sized producer, and proving a second pay horizon in the pool.

RANGER AND WICHITA FALLS

There was only one new location in Brown and one in Callahan County in the Ranger district during the week, activities having slumped in this district while they picked up tremendously in the Wichita Falls district, where 53 locations were staked during the week, the majority in Archer and Young Counties. The latter county led the area with 25, Wichita County had 7 and Archer had 16, while only 5 were reported for Wilbarger County.

The Texas Company, one of the most active companies in the district, drilling wells by itself, wildcats and field wells, and also holding an interest in several other tests, is starting one in the northwest corner of Section 1986, T.E.&L. Survey, Young County, and two other wildcats in the district. The company is drilling these in hopes of producing from the regular shallow levels in the various areas, and also with possibility of drilling deeper and contacting lower horizons, which have recently been proven in the county.

There were two completions in Callahan, two in Palo Pinto and two in Shackelford County during the week. These are all located in the Ranger district. Forty-six were completed in the Wichita Falls district.

Fain-McGaha's No. 1-C fee in Block 2, League 3, northern Archer County, and 1,500 feet southeast extension to the new pool in this area, is now estimated good for a 600-bbl. well producing through 2½-inch tubing. So far this is the best producer yet drilled in the field.

Deep Oil Development Co. and others' No. 1 L. F. Wilson, Lease 5, Chalk Hill Pool, Archer County, logged an oil sand at 2,238-2,242 feet and was shut down at 2,244 feet, looking like a possible 2,500-foot northwest extension to present Canyon production in this area.

United Producers Co.'s No. 1 L. F. Wilson, 1¼ miles southwest of the Chalk Hill Pool, has been abandoned at a total depth of 2,354 feet. Elevation is 961 feet.

Jacobs Oil & Gas Co. has started a new 4,500-foot test on the A. W. Thompson farm in the southwest corner of Section 456, T.E.&L. Survey, Young County. It is 800 feet north of a 3,800-foot producer owner by Slick estate, Pitzer and West, and is three-quarters of a mile east of the Jacobs Pool, which is producing from the 3,800-foot pay horizon. The company is trying to increase its production in this area to supply its 200-bbl. refinery which it is building in Section 432.

Ungren, Frazier and others' No. 1 Jackson, 1,700-foot northwest extension producer in northern Callahan County, located in Section 21, E.T.R.R. Survey, tested 72 bbls. in 24 hours after running tubing. Bottom of the hole is 913 feet, 2 feet in sand.

Baylor County

The Consolidated Oil Co. has completed its No. 1-A W. H. Portwood, the first well drilled in this field, southwestern Baylor County, in two years. The well is estimated good for 100 bbls. per day. Oil sand was logged at 1,369-1,410 feet. Elevation is 1,251 feet. This goes to prove that all Wichita Falls district is receiving some activity, and that the district is overcoming difficult conditions under which it has been laboring for the past year and a half.

The Texas Company is to drill a 4,000 or 4,500-foot test in the east central part of Young County on a 2,055-acre block, the location to be on the E. L. Burns land in Section 1,986, T.E.&L. Survey, Young County, as mentioned above. It is to be a cable tool test, and is located on a subsurface structure.

PANHANDLE DISTRICT

There were four completions in this district this week, three of which were old wells which had been deepened. Six other old wells were rigging up to drill deeper, the companies now taking this action to increase production in some of the old producers, and proving successful in many cases.

COMPLETIONS IN PANHANDLE DISTRICT

Carson County

Texoma Natural Gas Co.'s No. 1-E Dauer, top pay 2,285 feet, initial production 15,700,000 feet of gas, total depth 2,525 feet.

Gray County

Gulf Production Co.'s No. 10-A Bowers, old well drilled deeper, total depth 3,141 feet, no new pay logged, old total depth 3,070 feet, initial production 235 bbls. Stanolind Oil & Gas Co.'s No. 6 Palmer, old well drilled deeper, total depth 3,033 feet, plugged back to 3,010 feet, new total depth 2,944 feet, initial production 75 bbls. The Texas Company's No. 2-B McLarty Lester, old well deepened, dry and abandoned, total depth 2,845 feet.

COMPLETIONS IN RANGER DISTRICT

Callahan County

George Perry and others' No. 2 Berry, dry and abandoned, total depth 412 feet. Andy Urban's No. 1 Goodman, dry and abandoned, total depth 753 feet.

Palo Pinto County

Brazos River Gas Co.'s No. 2 Jenkins, dry and abandoned, total depth 2,100 feet. Sinclair Prairie Oil Co.'s No. 1 Dalton, dry and abandoned, total depth 3,105 feet.

Shackelford County

Charter Oil Co.'s No. 1 Morris and Buie, oil sand 1,578-1,060 feet, initial production 20 bbls., total depth 1,600 feet. Kaiser and Deming's No. 3 P. K. Clark, dry and abandoned, total depth 817 feet.

COMPLETIONS IN WICHITA FALLS DISTRICT

Archer County

T. M. Hellorm's No. 1 Perkins-Cullum, oil sand 645-48 feet, initial production 16 bbls., total depth 648 feet. Holbrook and Woods' No. 2 White, oil sand 615-31 feet, initial production 12 bbls., total depth 631 feet. Jones and Holcombe's No. 4 Thomas, oil sand 647-53 feet, initial production 16 bbls., total depth 653 feet. E. B. Lawson's No. 1 Andrews, dry and abandoned, total depth 2,302½ feet. Lindsey Drilling Co.'s No. 2 Wilson, oil sand 2,195-97 and 2,210 feet, initial production 350 bbls. flowing, total depth 2,210 feet. United Producers Co.'s No. 1 Wil-

WILDCAT OPERATIONS IN WEST TEXAS

Week Ending May 23

ANDREWS COUNTY

Company, well, farm name, section and block—	Remarks—
Fuhrman Pet. Co.'s No. 1 Boner, 1,320 ft. from N and 440 ft. from W, Sec. 24, Blk. A-43, P.S.L.	T.D. 4,541 ft.; shot 390 qts. 4,220-4,430 ft.; est. 15 bbls. hr.; cleaning out.

BORDEN COUNTY

Westyde Investment Co.'s No. 1 Looney, 990 ft. from S and E, Sec. 15, Blk. 31, Twp. 4n, T.&P. Sur.	Location.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur.	S.D. 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	S.D. 1,302 ft.
Link-Joiner's No. 1 McIntire, 853 ft. from S and 2,390 ft. from E, Sec. 31, Blk. 352, W. J. Mitchell Sur.	Location.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 930 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	S.D. 2,900 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles south Alpine	S.D. 1,750 ft.

CONCHO COUNTY

Beesley et al's No. 1 Waring Estate, 400 ft. from N and E, Sec. 163, T.&N.O. Sur.	S.D. 1,700 ft.; set 8-in. csg.

CRANE COUNTY

Continental Oil Co.'s No. 1-D Cowden, 200 ft. from S and 2,492 ft. from E Sec. 18, Blk. X	Drlg. 2,000 ft.

CROCKETT COUNTY

Doleman & Moore's No. 1 Forner, 2,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and S.D.
Stanolind Oil & Gas Co.'s No. 1 Massie, 660 ft. from S and 1,980 ft. from E, Sec. 47, Blk. UV, G.C.&S.F. Sur.	Drlg. 600 ft.
The Texas Company's No. 1 B. B. Ingham, 330 ft. from S and 2,330 ft. from E line, Sec. 36½, I.&G.N. Sur.	Location.

COKE COUNTY

Mid-Kansas Oil & Gas Co.'s No. 1 Hearn, 980 ft. from S and W, Sec. 271, Blk. 1-A, H.&T.C. Sur.	Drlg. 1,475 ft.

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur.	To resume drilling.

ECTOR COUNTY

Thomas et al's No. 1 Edwards, 330 ft. from S, 2,310 ft. from E, Sec. 38, Blk. 43, Twp. 3s, T.&P. Sur.	Drlg. 1,105 ft.
H. F. Wurts' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur.	T.D. 3,275 ft.

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son, dry and abandoned, total depth 2,354 feet. L. T. Burns' No. 1 D. W. Carter, dry and abandoned, total depth 1,504 feet; No. 1 Pastusek, dry and abandoned, total depth 1,451 feet. C. W. Clark and others' No. 1 Spoontz, dry and abandoned, total depth 1,483 feet.

G. A. Geiford's No. 1 Stinnett, oil sand 713-24 feet, initial production 2 bbls., total depth 724 feet. G. I. Oil Co.'s No. 3 Webb, total depth 723 feet, plugged back to 718 feet, initial production 27 bbls. oil and 12 bbls. of water. W. E. Maxson's No. 14 Green, sandy lime 1,120-35 feet, shot 80 quarts, total depth 1,135 feet. George L. Pace's No. 4 Green, sandy lime 1,154-74 feet, hard lime 1,174-75 feet, shot 80 quarts, initial production 30 bbls., total depth 1,175 feet. Perkins and Cullum's No. 8 Falls, sandy lime 1,103-22 feet, shot 100 quarts, initial production 80 bbls., total depth 1,122 feet; No. 8 Falls, sandy lime 1,109-32 feet, shot 80 quarts, initial production 90 bbls., total depth 1,132 feet.

Jack County

R. J. Brown's No. 1 Webb, dry and abandoned, total depth 722 feet.

Wichita County

F. C. Baldwin's No. 5 Dobie, oil sand 554-70 feet, initial production 15 bbls., total depth 570 feet. R. R. Clark's No. 19 Bickley, oil sand 864-74 feet, initial production 25 bbls., total depth 874 feet. G. W. Cooper's No. 20 Waggoner Brothers, oil sand 1,315-39 feet, initial production 80 bbls., total depth 1,339 feet. H. B. Herd's No. 1 Overby, oil sand 1,773-76 feet, initial production 70 bbls., total depth 1,777 feet. B. H. Hubbard's No. 1 Honaker, dry and abandoned, total depth 865 feet. Schlaffke Blair's No. 6 Honaker, oil sand 846-69 feet, initial production 14 bbls., total depth 869 feet. A. T. Wolfe's No. 7 Daume, dry.

Young County

C. E. Beaver's No. 1 Montgomery, dry and abandoned, total depth 723 feet. L. T. Burns' No. 1 Orr and others, dry and abandoned, total depth 633 feet. Culbertson Co.'s No. 1 Culbertson, dry and abandoned, total depth 884 feet. Glover and Huggins, dry and abandoned, total depth 730 feet. Lee Hamilton's No. 1 Bullock, temporarily abandoned. John Horville's No. 3 Logan, dry and abandoned, total depth 620 feet. Luther Hedrick's No. 1 Jones, dry and abandoned, total depth 780 feet. George L. Kelly's No. 1 Taack, dry and abandoned, total depth 751 feet. King Royalty Co.'s No. 38 Larimore, oil sand 695-709 feet, initial production 240 bbls., total depth 709 feet. Kleiner and Rigg's No. 8 Larimore, oil sand 708-19 feet, initial production 30 bbls., total depth 719 feet; No. 9 Larimore, dry and abandoned, total depth 763 feet; No. 9-B Larimore, oil sand 715½ feet, initial production 60 bbls., total depth 715½ feet.

John L. McMeens' No. 1 Hawkins, dry and abandoned, total depth 556 feet. E. R. Riggs' No. 1 Leberman, dry and abandoned, total depth 902 feet. Sam Watson's No. 1 Lofton, total depth 625 feet, plugged back to 589 feet, initial production 6 bbls. Simmon and Lively's No. 2 Drum, dry and abandoned, total depth 555 feet. O. M. Wallace's No. 1 Rowley, dry and abandoned, total depth 530 feet. Clarco Oil Co.'s No. 2 Marshall, temporarily abandoned. D. M. Knox' No. 1 Manning, oil sand 2,747-58 feet, initial production 319 bbls. in 12 hours, total depth 2,758 feet.

EAST TEXAS FIELDS

(Continued from Page 49)

tion Co.'s No. 6 C. E. Christian, top sand 3,725 feet, initial production 75 bbls. per hour through three-fourths-inch tubing choke, total depth 3,735 feet; No. 7-A C. E. Christian, top sand 3,586 feet, initial production 82 bbls. per hour through three-fourths-inch tubing choke, total depth 3,628 feet. Rhodes Drilling Co.'s No. 1 S. E. Bros, top sand 3,644 feet, initial production 59 bbls. per day pinched, total depth 3,717 feet. Houston Production Co.'s No. 2 S. S. Laird, top sand 3,623 feet, initial production 60 bbls. per hour through open tubing, total depth 3,709 feet.

Humble Oil & Refining Co.'s No. 3 J. D. Florey, location abandoned; No. 5-B H. Sexton, top sand 3,658 feet, initial production 33 bbls. in one-half hour through three-fourths-inch tubing choke, total depth 3,750 feet. Jackson and others' No. 1 Florence, top sand 3,707 feet, initial production 61 bbls. per hour through casing and tubing, total depth 3,666 feet. Lewis and others' No. 1 Mrs. A. W. Buckner, plugged and abandoned, total depth 3,822 feet. Lewis Production and Selby Oil & Gas Co.'s No. 4 D. Wills, top sand 3,599 feet, initial production 60 bbls. in one-half hour through open 2½-inch tubing, total depth 3,614 feet. C. L. McMahon and others' No. 4 S. S. Laird, top sand 3,652 feet, initial production 40 bbls. in 20 minutes through open tubing, total depth 3,662 feet.

Mills Bennett Production Co.'s No. 10 Brightwell, top sand 3,635 feet, initial production 200 bbls. per hour through open tubing, total depth 3,685 feet. Roberts and Roscoe's No. 4 C. E. Christian, top sand 3,657 feet, initial production 61 bbls. per day pinched, total depth 3,665 feet. Stanolind Oil & Gas Co.'s No. 2 C. O. Christian, top sand 3,645 feet, initial production 35 bbls. in one-fourth hour through 2½-inch tubing, total depth 3,647 feet. The Texas Company's No. 3 Chapperal, top sand 3,722 feet, initial production 100 bbls. per hour through 2-inch tubing, total depth 3,728 feet. F. L. Thompson's No. 2 Dickerson, top sand 3,631 feet, initial production 30 bbls. per hour through five-eighths-inch tubing choke, total depth 3,690 feet.

South Rusk County

Adams and Rowe, Inc.'s No. 2 J. E. Arnold, top sand 3,663 feet, initial production 57 bbls. per hour through open tubing, total depth 3,704 feet. Casey Oil Co.'s No. 1-A E. B. Alford, abandoned. Jim Cloud's No. 5 W. F. Neal, top sand 3,795 feet, initial production 20 bbls. in 10 minutes through 1-inch tubing choke, total depth 3,800 feet. Combined Oil Interest's No. 9 Eaton, top sand 3,715 feet, initial production 132 bbls. per hour through three-fourths-inch tubing choke, total depth 3,737 feet. Deep Rock and Amerada Petroleum Corp.'s No. 6 Stowall, top sand 3,628 feet, initial production 105 bbls. per hour through open tubing, total depth 3,695 feet. Gayneta Oil Co.'s No. 2 Calvin Young, top sand 3,700 feet, initial production 60 bbls. per hour through open tubing, total depth 3,750 feet. Golding and Murchison's No. 3 E. E. Thrash, top sand 3,641 feet, initial production 150 bbls. per hour through open 2½-inch tubing, total depth 3,658 feet.

Gulf Production Co.'s No. 2 Elnora Cole, top sand 3,779 feet, initial production 70 bbls. per hour through three-fourths-inch tubing choke, total depth 3,789 feet; No. 6 C. K. Grissom, top sand 3,630 feet, initial production 65 bbls. per hour through three-fourths-inch tubing choke, total depth 3,662 feet; No. 4-C Mayfield, top sand 3,609 feet, initial production 82 bbls. per hour through three-fourths-inch tubing choke, total depth 3,625 feet; No. 3-D Mayfield, top sand 3,643 feet, initial production 80 bbls. per hour through three-fourths-inch tubing choke, total depth 3,651 feet; No. 2 Walter Shaw, top sand 3,688 feet, initial production 72 bbls. per hour through three-fourths-inch tubing choke, total depth 3,698 feet.

Humble Oil & Refining Co.'s No. 19-Kangerga, top sand 3,658 feet, initial production 35 bbls. in one-half hour through three-fourths-inch tubing choke, total depth 3,706 feet; No. 2-B H. A. Piercy, top sand 3,686 feet, initial production 46 bbls. in one-half hour through three-fourths-inch tubing choke, total depth 3,706 feet; No. 5-B R. E. L. Silvey, top sand 3,614 feet, initial production 43 bbls. per hour through three-fourths-inch tubing choke, total depth 3,729 feet; No. 7-B R. E. L. Silvey, top sand 3,620 feet, initial production 47 bbls. in one-half hour through three-fourths-inch tubing choke, total depth 3,720 feet; No. 2-C R. E. L. Silvey, top sand 3,755 feet, initial production 42 bbls. in one-half hour through three-fourths-inch tubing choke, total depth 3,775 feet; No. 3 J. E. B. Sneed, top sand 3,764 feet, initial production 41 bbls. in one-half hour through three-fourths-inch tubing choke, total depth 3,784 feet; No. 3 F. F. Wooster, top sand 3,742 feet, initial production 39 bbls. per hour through three-fourths-inch tubing choke, total depth 3,801 feet. H. L. Hunt's No. 5 W. P. Moore, top sand 3,625 feet, initial production 75 bbls. in one-half hour through 2-inch open tubing, total depth 3,640 feet; No. 4 S. A. Plowman, top sand 3,740 feet, initial production 65 bbls. in one-half hour through open 2-inch tubing, total depth 3,786 feet; No. 2 Neil Turner, top sand 3,714 feet, initial production 90 bbls. per hour through 2-inch open tubing, total depth 3,734 feet.

Imperator Oil Co.'s No. 2 Cox, top sand 3,658 feet, initial production 60 bbls. per hour through open tubing, total depth 3,716 feet. Lion Oil & Refining Co.'s No. 3 W. P. Brett, top sand 3,718 feet, initial production 35 bbls. in one-half hour through open tubing, total depth 3,782 feet. M. H. McMurray and others' No. 2 Samp Stone, top sand 3,656 feet, initial production 61 bbls. in one-half hour through open tubing, total depth 3,705 feet. G. A. Manahan's No. 2 Dr. Deason, top sand 3,662 feet, initial production 16 bbls. in one-fourth hour through 1-inch tubing choke, total depth 3,688 feet.

Mid-Kansas Oil & Gas Co.'s No. 2 H. C. Burton, top sand 3,618 feet, initial production 110 bbls. per hour through open 2½-inch tubing on 2-inch lead, total depth 3,658 feet; No. 7 S. H. Moores, top sand 3,625 feet, initial production 40 bbls. per hour through open 2½-inch tubing, total depth 3,727 feet. Ortiz Oil Co.'s No. 1 Church, top sand 3,624 feet, initial production 67 bbls. per hour through open 2-inch tubing, total depth 3,646 feet. Primrose Petroleum Corp.'s No. 2 W. P. Brett, top sand 3,672 feet, initial production 80 bbls. per hour through open tubing, total depth 3,700 feet. George B. Pay's No. 4 Wilson, top sand 3,633 feet, initial production 60 bbls. per hour through open tubing, total depth 3,657 feet. D. B. Reed and Standard Supply Co.'s No. 1 Church, top sand 3,647 feet, initial production 75 bbls. per hour through three-fourths inch tubing choke, total depth 3,677 feet. Retsal Drilling Co.'s No. 2 Maxwell, top sand 3,560 feet, initial production 84 bbls. in 24 hours' pumping, total depth 3,694 feet. Union Oil Co. of Texas' No. 2 Deason, top sand 3,684 feet, initial production 75 bbls. per hour through open 2½-inch tubing, total depth 3,778 feet.

Sinclair Prairie Oil Co.'s No. 23 Kinney, top sand 3,669 feet, initial production 40 bbls. in 15 minutes through open tubing, total depth 3,684 feet; No. 4 Ledbetter, top sand 3,583 feet, initial production 40 bbls. in 15 minutes through open tubing, total depth 3,600 feet. Stanolind Oil & Gas Co.-Pure Oil Co.'s No. 4 R. A. Moores, top sand 3,643 feet, initial production 11 bbls. per hour through open 2½-inch tubing, total depth 3,646 feet; No. 5 R. A. Moores, top sand 3,615 feet, initial production 32 bbls. in 15 minutes through open tubing, total depth 3,621 feet.

G. N. Johnson, trustee's No. 1 R. G. Mason, top sand 3,592 feet, initial production 105 bbls. per hour through open 2½-inch tubing, total depth 3,609 feet. John Hoosier's No. 1-C G. W. Eaton, top sand 3,790 feet, initial production 18 bbls. in 10 minutes through three-fourths inch tubing choke, total depth 3,810 feet.

Smith County

Droppleman and Bunte's No. 1 Atkinson, dry and abandoned, top Austin chalk 3,790 feet, base Austin chalk 3,860 feet, top sand 3,861 feet. Big Indian Syndicate's No. 5 Wolford, top sand 3,737 feet, initial production 60 bbls. in 30 minutes through open tubing, total depth 3,743 feet. Alex McCutcheon's No. 1 Stone, top sand 3,783 feet, initial production 30 bbls. in 15 minutes through open tubing, total depth 3,785 feet. Nash and Strickland's No. 2 T. O. Wright, top sand 3,696 feet, initial production 80 bbls. in 30 minutes through open 2½-inch tubing, total depth 3,711 feet. Pugh and Hickman's No. 3 R. G. Wright, top sand 3,698 feet, initial production 60 bbls. in 30 minutes through open tubing, total depth 3,712 feet. Rasmussen and others' No. 1-A S. S. Cooke, top sand 3,803 feet, initial production 40 bbls. in 15 minutes through open 2½-inch tubing, total depth 3,808 feet.

Sinclair Prairie Oil Co.'s No. 16-A Mayfield, top sand 3,770 feet, initial production 45 bbls. in 15 minutes through open tubing, total depth 3,778 feet; No. 17-A Mayfield, top sand 3,830 feet, initial production 45 bbls. in 15 minutes through open tubing, total depth 3,833 feet. Sun Oil Co.'s No. 3 R. L. Henson, top sand 3,722 feet, initial production 71 bbls. per hour through open tapered tubing, total depth 3,728 feet. Weaver-Crim Oil Corp.'s No. 2 fee, top sand 3,757 feet, initial production 38 bbls. in 15 minutes through open tubing, total depth 3,762 feet. C. K. West's No. 1 L. S. Sartain, top sand 3,800 feet, initial production 30 bbls. in 30 minutes through open tubing, total depth 3,804 feet.

Upshur County

Humble Oil & Refining Co.'s No. 3 A. O. Phillips, top sand 3,635 feet, initial production 92 bbls. in one hour through three-fourths inch tubing choke, total depth 3,672 feet. Jay and Kay Oil Co.'s No. 3 O. M. Victory, location abandoned. Simms Oil Co.'s No. 2 W. R. Nicholson, top sand 3,624 feet, initial production 120 bbls. in one hour through 2-inch open tubing, total depth 3,624 feet. Simms and Buttram's No. 3 Nicholson, top sand 3,642 feet, initial production 105 bbls. in one hour through 2-inch open tubing, total depth 3,648 feet. Sun Oil Co.'s No. 4 J. T. Loden, top sand 3,683 feet, initial production 44 bbls. in one hour through tubing, total depth 3,706 feet. J. A. Wood's No. 5 A. J. Sanders, top sand 3,645 feet, initial production 50 bbls. in 15 minutes through 2½-inch open tubing, total depth 3,666 feet.

Van Zandt County

Pure Oil Co.'s No. 2 C. White, initial production 100 bbls. first 24-hour gauge after choked for proration, total depth 2,951 feet; No. 1 R. M. Butler, initial production 75 bbls. first 24-hour gauge after choked for proration, total depth 3,009 feet.

EAST AND EAST CENTRAL TEXAS WILDCATS

(Continued from Page 49)

ELLIS COUNTY

Armstrong's No. 1 Milton Cook, SE cor. of 50-ac. tract, S. Frederick Sur. ..... Drlg. 215 ft.
Clark Brooks' No. 1 Anderson, SE cor. of 3,900-ac. tract, 10 miles SW of Wachatchie, E. C. Branch Sur. ..... Location.
Community's No. 1 Reeves ..... Waiting on cmt. to set 100 ft.
E. M. Rogers' No. 1 John Lee Winn, 1,650 ft. from E and 150 ft. from S of Orland, Orlo Wheeler Sur. ..... S.D. 1,435 ft.
Wortham Petroleum Co.'s No. 2 Cerf, John Harris Sur., 50 ft. W of No. 1 ..... S.D. 1,150 ft.

FRANKLIN COUNTY

Tom Harper's No. 1 fee, 150 ft. from N line and 200 ft. from E line of 116-ac. tr., W. M. Dawson Sur. .... T.D. 3,207 ft. (corrected).
T. E. Mayberry's No. 1 M. L. Edwards, 345 ft. from E line of lease and 6⅛ miles NW of Mount Vernon, C. R. Miller Sur. ..... Derrick.

GREGG COUNTY

Abernathy and Kirkpatrick's No. 1 Bramlett, 330 ft. from N and W lines of S 25 acres of 32-ac. tract, D. Sanches Sur. ..... Derrick.
Alexander and Rassmussen's No. 1 Dixon, 335 ft. N and 169 ft. W of SE cor. of J. M. Dixon 106.5-ac. tract, L. Beaty Sur. ..... Drlg. 2,300 ft.
Henry L. Allen's No. 1 Bonner Estate, 330 ft. from N and E lines of 19.4-ac. lease, J. McRae Sur. ..... Drlg. 3,551 ft.
Arkansas Fuel Oil Co.'s No. 1 Burnside, 240 ft. from N line and 450 ft. from E line of lease, F. W. Johnson Sur. ..... Drlg. 1,200 ft.
Arkansas Fuel Oil Co.'s No. 1 E. M. Watley, 415 ft. E and 330 ft. N of SW cor. of 43.91-ac. lease, Wm. Robinson Sur. ..... Drlg. 1,583 ft.

D. M. Buffington's No. 1 Dansley, 500 ft. W and 200 ft. N of NE cor. of Searight Blackman 100-ac. lease, W. P. Chisum Sur. ..... S.D. 1,700 ft.
Burnham and Johnston's No. 1 Jackson-Sample, 150 ft. from N line of tract and S offset to Zion's No. 1 Barnett, Jacob Taylor Sur. ..... Set surface csg.
Central Drilling Co. et al's No. 1 Castleberry, 150 ft. from N line and 69 ft. from S line, 150 ft. from W line and 450 ft. from E line of 4-ac. tract, D. Sanches Sur. ..... Drlg. 1,200 ft.
Continental Oil Co.'s No. 1 A. A. King, 330 ft. from N line and center of E and W lines of lease, M. Tennison Sur. ..... Drlg. 3,645 ft.
Cranfill & Reynolds' No. 1 fee, 330 ft. from W line and center of N and S lines of 8-ac. tract, J. Ruddle Sur. ..... Bldg. derrick.
Dodd and Markey's No. 1 J. F. Holt, 615 ft. E and 707 ft. N of SW cor. of 200-ac. tract, H. Edwards Sur.... Derrick.
F. Dodson et al's No. 1 Bacle, 158 ft. from E line and center of N and S lines of E 5 acres, G. W. Hooper Sur. ..... Drlg. 2,765 ft.
Empire Gas & Fuel Co.'s No. 1 H. E. Thomas, 330 ft. from N line and E lines of lease, J. M. Morris Sur. ..... Location.
Eslick and Bazzell's No. 1 J. H. Thomas, 225 ft. from N and S lines and 390 ft. from W line of N 15 acres of 65-ac. tract, H. F. Rogers Sur. ..... T.D. 3,615 ft; plugged back to 3,585 ft.; swabbing.
Export Petroleum Corp.'s No. 1 Coleman, center of Blk. No. 16, H. R. Hokit Sur. ..... Drlg. 1,800 ft.
Fosh et al's No. 1 Stencil, center of Blk. No. 55, M. Dillard Sur. ..... Rig up.
Lewis Godlin's No. 1 E. L. Walker, 330 ft. N of road, 330 ft. from E line of 80.3-ac. tract, M. Dillard Sur... Derrick.
Humble Oil & Refining Co.'s No. 1 H. Castleberry, 330 ft. from N and E lines of lease, B. H. Hampton Sur. ..... Derrick.
Iowan Payne Oil Co.'s No. 1 Akins, 660 ft. from W line and center of N and S lines of lease, W. H. Castleberry Sur. ..... Derrick.
Koberg Oil Co.'s No. 1 L. Martin, 330 ft. from S and W lines of 25-ac. tract, T. Johnson Sur. ..... Waiting on cmt. to set 3,676 ft.
K. B. Oil Co.'s No. 1 Dickson, 150 ft. from S and 150 ft. from W of 5-ac. lease, Mary Van Winkle Sur.... S.D. 700 ft.
Lovett-Norr et al's No. 1 Rufus Smith, 1,100 ft. from N line and 750 ft. from W line of lease, R. Slaughter Sur. ..... Set surface csg. 55 ft.
Magnolia Petroleum Co.'s No. 1 Land and Crim, 330 ft. from N line and 338 ft. from E and W lines of 30.78-ac. lease, L. B. Outlaw Sur. ..... Drlg. 780 ft.
Magnolia Petroleum Co.'s No. 1 H. P. Hale, 330 ft. from N and W lines of 50-ac. lease, M. V. Winkle Sur. ..... Derrick.
Mission Oil Co.'s No. 1 W. P. Crews, N offset to Bay Oil Corp.'s No. 1 Crews, J. N. Bradshaw Sur. ..... Waiting on cmt. to set 3,712 ft.
McVey et al's No. 1 Kelly Dixon, 140 ft. NW along corner line of street from E corner of Blk. No. 137 and 655 ft. SW at right angles, M. V. Winkle Sur... Spudded and S.D.
J. C. O'Brien's No. 1 Maurice Prothro, 330 ft. from W line and center of N and S lines of 3.5-ac. lease, John Blair Sur. ..... Derrick.
J. D. Patty et al's No. 1 J. C. McCormick, 207 ft. SE at right angles to Gladewater-Tyler road and 540 ft. SW of Abernathy and Kirkpatrick's No. 1 Greggston, M. Dillard Sur. ..... Drlg. 2,675 ft.
R. A. Payne et al's No. 1 R. M. Woods, 20 ft. from S line and 31 ft. from W line of 2.13-ac. lease, H. R. Holit Sur. ..... Derrick.
Pennsylvania Oil & Refining Co.'s No. 1 Bonner, 693 ft. W and 330 ft. S of most easterly NE cor. of survey, James McRae Sur. ..... Off 25 deg. at 2,500 ft.; straightening hole.
Pilot Oil Co.'s No. 1 P. McGeorge, 330 ft. from N line and center of E and W lines of 12-ac. lease, P. McAnnelly Sur. ..... Derrick.
Pruitt and Standberry's No. 1 M. B. Hughey, Blk. No. 150, Kilgore Townsite, Mary Van Winkle Sur. ..... Derrick.
Reeves et al's No. 1 W. L. Hestland, center of five-eighths-acre tract, midway from Lampton Church and Sarson's No. 3 Hall, D. Sanches Sur. ..... T.D. 1,450 ft.
Rhodes Drilling Co.'s No. 1 J. E. Christian, 125 ft. from S line and center of W 2 acres of 4-ac. tract, G. W. Hooper Sur. ..... Rig up.
Frank Russell's No. 1 Crimm, center of one-half-acre tract, M. V. Winkle Sur. ..... Rig up.
Showers and Moncrief's No. 1 A. D. Bacle, center of W 5½ acres of N 11-ac. lease, G. W. Hooper Sur.... Waiting on cmt. to set 108 ft.
Smith and Merriwinkle's No. 1 Jim Gray, west offset to Houston and Heep's No. 4 Hall, D. Dainwood Sur. ..... Derrick.
Stroube and Stroube's No. 1 Finley and Thomas, 150 ft. from N line and 330 ft. from W line of 10-ac. lease, C. H. Alexander Sur. ..... Bldg. derrick.
Stroube and Stroube's No. 1 Anderson-Harris, 160 ft. from S and E lines of 5-ac. lease, being the E 5 acres of H. W. Wages tract, C. H. Alexander Sur. ..... Drlg. 2,630 ft.
Sun Oil Co.'s No. 1 J. M. Campbell, 330 ft. from S line and center of E and W lines of lease, G. R. Rains Sur. ..... Location.
Travis and Crosby's No. 1 K. P. Lodge Lot, 210 ft. S of Gulf's No. 6 Alexandria and 40 ft. from center line of road, M. V. Winkle Sur. ..... T.D. 3,587 ft.; shot with 30 qts. at 3,550-70 ft.; bailing.
T. J. Tucker's No. 1 Mary Rufus, center of one-half-acre tract, Mary Van Winkle Sur. ..... T.D 3,630 ft.; waiting on standard rig.
Valentine Oil Co.'s No. 1 Goyne-Hughey, 6,100 ft. from S and 6,800 ft. from W of survey, Mary Van Winkle Sur. ..... Rig up.
C. William et al's No. 1 George Anderson, center of 2½-ac. lease, C. H. Alexander Sur. ..... Drlg. 2,950 ft.
Zion Oil Co.'s No. 1 Barnett, 260 ft. from E and W lines and 330 ft. from south L of lease, E half of W 50 acres of 150-ac. tract, Jacob Taylor Sur. .... Running csg.; T.D. 3,743 ft.

HENDERSON COUNTY

B. L. Green et al's No. 1 M. H. Gussett, (old well drilled deeper), 150 ft. from N line and 1,000 ft. from W line of 105.5-ac. tract, 3 miles SW of Mabank, L. D. Stover Sur. ..... S.D. 920 ft.

HILL COUNTY

Sherman-Houseman's No. 1 J. F. Griffith, in Samuel Waddell Sur. ..... S.D. 3,256 ft.

HOPKINS COUNTY

Roark et al's No. 1 Taylor, 220 ft. from N and W lines of 80-ac. tract in the John Polk Sur. ..... S.D. 540 ft.

HOUSTON COUNTY

Nelson's No. 1 Harron, 300 ft. out of NE cor. of 327-ac. tract, J. P. Procella Sur. ..... Spudded and S.D. 37 ft.
T. B. Roberts' No. 1 Pennington, 750 varas W of E line and 500 varas from S line of survey on 186-ac. tract, Ramond LaGarza Sur. ..... T.D. 2,660-66 ft.

HUNT COUNTY

Branson et al's No. 1 Gray ..... Location.
Russell et al's No. 1 Brooks and Quattlebaum ..... S.D. 1,455 ft.

KAUFMAN COUNTY

Standy Darnell et al's No. 1 Sally Pannill ..... T.D. 1,315 ft.

LAMAR COUNTY

G. W. Davy et al's No. 1 McGustion, 450 ft. from S line, 450 ft. from W line of farm and survey, Galet Wood Sur. ..... Temp. abnd.
Doyle and Jondeau's No. 1 Martin, 500 ft. from N line and 330 ft. from E line of tract, Joseph Deck Sur. ..... S.D. 2,446 ft.
Doyle and Jondeau's No. 1 Horn, 226 ft. from S line and 608 ft. from E line of lease, R. P. Mayor Sur. ..... Drlg. 2,705 ft.

LEON COUNTY

Salzer Drlg. Co.'s No. 1 Dr. J. M. Blair, 1,010 ft. from N line, 1,986 ft. from W line, Sec. 19, Blk. E, Lucia Hibbard Sur. ..... Derrick on ground.

MORRIS COUNTY

Leonard's (Tucker-Fullwood) No. 1 P. M. Staggers, 450 ft. from N line and 150 ft. from E line of 65.5-ac. tract, J. D. Nelson Sur. ..... T.D. 3,551-3,567 ft.; bailed parts of 2½ days; no show of oil and gas.
Merrill's No. 1 Walcott, 330 ft. from N and E lines of most northerly NE cor. of survey, 3 miles S of Carson, D. A. Russell Sur. ..... Derrick.
Olvey et al's No. 1 Gabriel Silbey, 330 ft. from N line and about 500 ft. from W line of lease, 3½ miles NE of Carson, W. O. Matthews Sur. ..... S.D. 2,694 ft.

NACOGDOCHES COUNTY

Adams et al's No. 1 Fuller Brothers, located in a 269-ac. tract, Jose Flores Sur. ..... Location.
Taylor-Vaughn's No. 1 Dixon Greer, 160 ft. from W and 450 ft. from N lines of 60-ac. tract in the M. G. Herrera Sur. ..... S.D. 265 ft.

POLK COUNTY

Sunshine Oil Co.'s No. 1 Brawley, 150 ft. from S line and 250 ft. from E line of W 100 acres of lease, F. Johnson Sur. ..... Derrick.
Taylor et al's No. 1 E. L. Duke, 330 ft. from N and W lines of 25.5-ac. tract, SW cor. of county, Peter J. Manard Sur. ..... Rig up.

RAINS COUNTY

C. H. Bayliss' No. 1 Ownby, 150 ft. N and 1,100 ft. from E of most easterly SE cor. of survey, Alexander Sur. ..... S.D. 4,036 ft.; to drill deeper.

RED RIVER COUNTY

Hoffman and Henson's No. 1 H. H. Lennox, 2,790 ft. W and 300 ft. S of most easterly NE cor. of survey, J. E. Edmondson Sur. ..... S.D. 60 ft.
Concord Oil Co.'s No. 1 J. R. Dellahunty, 500 ft. from N of Isaac Moore Sur. and 200 ft. E of E line of Robert Glass Sur. ..... S.D. 2,546 ft.

ROCKWALL COUNTY

Bucanner Oil Co.'s No. 1 H. L. Lofland, center of 69-ac. tract in W. M. Bird Sur. ..... Set 10-in. csg. 120 ft.

RUSK COUNTY

Brooks Petroleum Co.'s No. 1 Mayfield, Daniel Clark Sur. ..... Top sand 3,622 ft.; waiting on standard rig; would not flow; T.D. 3,702 ft.
Butler and Calhoun's No. 1 C. C. Lowe, 225 ft. from N line and 200 ft. from E line of 85-ac. lease, W. G. Tutt Sur. ..... Drlg. 1,200 ft.
Byrd-Frost's No. 1 Buckner, J. E. Peyton Sur. ..... T.D. 4,077 ft.; junked; will skid derrick.
Chaplin and Bass' No. 1 Pinkston, 330 ft. from S and E lines of 10-ac. lease, J. B. De Cadena Sur. ..... Drlg. 1,685 ft.
R. W. Fair et al's No. 1 J. R. Alford, center of Blk. No. 24, T. J. Moore Sur. ..... T.D. 3,635 ft.
Gant-Gerwin and Wegener's No. 1 L. A. Till, 330 ft. from N line and 464 ft. from W and E line of 26-ac. lease and tract, M. V. Pena Sur. ..... S.D. 3,663 ft.; would not flow through tubing, waiting on standard rig.
Gant and Garwin's No. 1 W. P. Moore, 330 ft. S and E of SW cor. of Arkansas, W. P. Moore 40-ac. tract, M. V. Pena Sur. ..... Location.
J. Guinn's No. 1 Neal Cooper, center of Blk. No. 36, T. J. Moore Sur. ..... Drlg. 1,080 ft.
Harris and Russell's No. 1 T. W. Harris, 330 ft. from S line and 660 ft. from W line of most southerly SW cor. of 160-ac. tract, 3 miles SW of Henderson, W. G. Davis Sur. ..... Derrick.
Hasting and Dodson's No. 1 E. B. Alford, center of Blk. No. 27, T. J. Moore Sur. ..... Derrick.
Hathaway et al's No. 1 Gray, J. M. McLain Sur. ..... Waiting on csg.; T.D. 3,519 ft.
Heiden-Rodgerson et al's No. 1 Barton and Birdwell, N offset to Reisinger et al's No. 1 Barton, W. G. Tutt Sur. ..... S.D. 3,727 ft.
Hendershot et al's No. 1 Green Washington, 330 ft. from N line and 250 ft. from W line of 11.75-ac. tract, D. Clark Sur. ..... Set surface csg.
W. F. Hollifield's No. 1 Wylie, 160 ft. from W and E line and 330 ft. from S line of 10-ac. lease, Juan Ximenes Sur. ..... T.D. 3,676 ft.
W. C. Know's No. 1 W. D. Peterson, center of 3.75-ac. tract, Jacob Lewis Sur. ..... S.D. 2,200 ft.; rig moved off.
Meyer et al's No. 1 Tom Lacy, 350 ft. from N and W line of N 50 acres of 100-ac. tract, J. N. Sparks Sur. ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 1 Henry Clay estate, 370 ft. from S line and 330 ft. from W line of 43-ac. tract, M. V. Pena Sur. ..... T.D. 3,733 ft.
Pace Petroleum Co.'s No. 1 Wells, W offset to East Texas, W. P. Chisum Sur. ..... Derrick.
Patterson Drilling Co.'s No. 1 W. N. Brightwell, center of 3.4-ac. tract, R. E. Winn Sur. ..... T.D. 3,544 ft.
Ross Seward's No. 1 Burton, J. J. Y'Barbo Sur. ..... Skidded rig; S.D. 1,500 ft.
Sabins et al's No. 1 J. R. Irion, 330 ft. from S and E line of 2-ac. tract, John Womack Sur. ..... Rig up and S.D.
Jay Simmon's No. 1 D. C. Joyner, 2,050 ft. from S line and 300 ft. from W line of 74.11-ac. tract, F. Cordova Sur. ..... Rig up and S.D.
Sinclair Prairie Oil Co.'s No. 1 Allen Kerah, 878 ft. NE along N line from NW cor. and 330 ft. SE at right angles, E. B. Fowlkes Sur. ..... T.D. 3,657 ft.
W. L. Stearns' No. 1 Negro Church, center of tract, Juan Ximenes Sur. ..... Rig up.
Sun Oil Co.'s No. 1 Ellen Till, 330 ft. from S line and 206 ft. from W line of 126-ac. tract, M. C. Pena Sur. ..... Drlg. 3,435 ft.
Sun Oil Co.'s No. 1 Alph Lee, 2,323 ft. from E line and center of N and S lines of 94-ac. lease, Peter Tipps Sur. ..... Rig up.
Tex Jersey Oil Co.'s No. 1 Cora Hannah, center of 6-ac. lease, J. B. De Cadena Sur. ..... Preparing to spud.
R. H. Vice's No. 1 Neal Cooper, 315 ft. SW along NW line of Cooper tract and 141 ft. SE at right angles, T. J. Moore Sur. ..... Waiting on cmt. to set
Sam K. Vierson's No. 1 Will McCord, 330 ft. from S line and 180 ft. from E line of 5.48-ac. lease and tract, J. B. De Cadena Sur. ..... Derrick.
Watson and Butler's No. 1 G. W. Tipps, 230 ft. from S line and 600 ft. from W line of 13-ac. lease, H. M. Smith Sur. ..... Derrick.
Weaver-Crim's No. 1 F. Bean, 175 ft. from NW line and 212 ft. from S line of 16-ac. lease, Mary Cogswell Sur. ..... Drlg. 3,700 ft.
Nat Wiseman's No. 1 Thrash, 177 ft. S and 87 ft. E of NW cor. of 62.6-ac. tract and 2½-ac. lease, F. Cordova Sur. ..... Derrick.

JOINER POOL—RUSK COUNTY

Paulett et al's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ..... S.D. 1,465 ft.

SMITH COUNTY

Joiner et al's No. 1 C. S. Jackson ..... S.D.; swabbed dry 3,985 ft.
J. E. Lucas' No. 1 Henry Jackson, 150 ft. from N and E lines of 25-ac. tract, James Jordan Sur. .... Set surface csg.
R. J. McMurray's No. 1 Frank Cole, 330 ft. from E line of lease and center of N and S lines of N 10.20-ac. lease, E. Daniels Sur. ..... T.D. 3,772 ft.
Robert S. Monroe, 330 ft. from S line and center of E and W lines of 12-ac. lease, D. Shaw Sur. ..... Bldg. derrick.
Quintella McCullough's No. 1 Jessie Cole, 200 ft. from S line and center of E and W lines of 6-ac. lease, J. Jordan Sur. ..... Coring 3,745 ft.
Smith Oil & Gas Co.'s No. 1 S. S. Cooke, 330 ft. S and 330 ft. W of SE cor. of Sinclair Prairie's E. E. Moores lease, Juan Vargus Sur. ..... Set surface csg.
Sutton and Hawkins' No. 1 Church Lot, 210 ft. from S line and 180 ft. from W line of tract, James Jordan Sur. ..... Drlg. 2,870 ft.
Alph Tillman et al's No. 1 Jessie Cole, 137 ft. from E line and 375 ft. from N line of 32-ac. lease, center of 5-ac. lease, James Jordan Sur. ..... Spudding.

TITUS COUNTY

Perry V. Cook's No. 1 M. C. Rogers, center of SW of Moore Sur. ..... T.D. 4,212 ft.

UPSHUR COUNTY

Conservative Oil Co.'s No. 1 E. O'Byrne, 350 ft. from N and E lines of 20-ac. lease, D. Ferguson Sur. ..... Testing 3,738 ft.
Cranfill & Reynolds and Russ' No. 1 Williams, 330 ft. from S and E lines of lease, McKinley and Williams Sur. ..... Rig up.
Faith Oil Co.'s No. 1 E. H. Brawley, 330 ft. E and W of NE cor. of The Texas Company's J. Williams 93-ac. lease ..... Drlg. 1,320 ft.
Grover Hart's No. 1 Allen, 330 ft. from S and E lines of lease, one-half mile W of Mountain, Gonzales Sur. ..... Derrick.
Hill Kimsey's No. 1 D. F. Smith, 466 ft. from S line and 1,165 ft. from E line of 266-ac. tract, J. R. Davis Sur. ..... Derrick.
Pat Hudson et al's No. 1 D. F. Smith, 330 ft. out of SE cor. of W 100 acres of the N 200 acres of the 272-ac. lease, 3 miles E and 1¼ miles N of Cranfill & Reynolds' No. 1 Rash, John Denson Sur. ..... Waiting orders 3,710 ft.
Magnolia Petroleum Co.'s No. 1 L. Graves, 354 ft. from N line and S line and 1,017 ft. from E and W lines of lease, M. Irwin Sur. ..... Location.
Mannas and Snuggs' No. 1 G. C. Pool, 330 ft. from N and W lines of 55-ac. tract, S. J. Poer Sur. ..... Rig up.
J. C. McFarland et al's No. 1 Willie Starr, center of S 40 acres of Starr 96-ac. tract, Charles Cooper Sur. ..... S.D. 3,523 ft.
Mudge Oil Co.'s No. 1 A. L. Shelton, 330 ft. from S and W lines of 8.8-ac. lease, D. Ferguson Sur. ..... Rig up.
Pitts et al's No. 1 H. Davis, center of 7.5-ac. lease, W. R. Stephens Sur. ..... Derrick.
S. D. Reynolds' No. 1 W. R. Nichols, 330 ft. from S line and center of E and W lines of N half of Miller and Reynolds lease, M. Mann Sur. ..... Set surface csg.
Sorrells and Owens' No. 1 J. W. Free, 330 ft. from S and E lines of lease, William King Sur. ..... Derrick.
J. Thomas Cox et al's No. 1 L. B. Miller, 330 ft. from S and E lines of 104.4-ac. tract ..... Location.
A. A. Trammell et al's No. 1 E. H. Hampton, 330 ft. from S and E line of S 60 acres of E 150 acres of 192-ac tract, William King Sur. ..... Top sand 3,686 ft.; S.D. 3,688 ft.
Webster's No. 1 R. H. McClelland, 1,956 ft. E and 385 ft. S of NW cor. of 751-ac. tract, M. P. Del Torres Sur. ..... Derrick.
G. L. Wickliffe et al's No. 1 M. E. Florence, center of 41.5-ac. lease, M. Chandler Sur. ..... Drlg. 2,540 ft.

VAN ZANDT COUNTY

Barton et al's No. 1 C. L. Hubbard, 600 ft. out of NE cor. of Hubbard 225-ac. tract, 3½ miles S of Canton. M. J. DeCadena Sur. ..... S.D. 2,405 ft.
Kelly O. & G. Co.'s No. 1 Lemaford, center of Lemaford tract, John Conner Sur. ..... S.D. 2,300 ft.
Pure Oil Co.'s No. 2 N. R. Blake, 501 ft. S of N line and 225 ft. W of E line of lease, John Walling Sur. ..... Cmt. setting.
Pure Oil Co.'s No. 3 B. W. Russell, 650 ft. W of E line of 30-ac. tract, David Rose Sur. ..... Location.
Pure Oil Co.'s No. 4 A. W. Ellison, 700 ft. S of N line and 225 ft. E of W line of lease, James Rose Sur.... Cmt. setting 2,890 ft.
Pure Oil Co.'s No. 5 L. M. Brawner, 200 ft. S of N line and 1,572 ft. W of E line of lease, John Walling Sur. ..... Drlg. 2,770 ft.
Pure Oil Co.'s No. 5 W. F. Swain, 552 ft. W of E line and 250 ft. N of S line of lease, John Walling Sur. ..... Drlg. 2,115 ft.
The Texas Company's No. 6, 1,044 ft. N of S line and 59 ft. W of E line of lease, John Walling Sur. ..... Drlg. 1,034 ft.
Van Oil Association's No 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... T.D. 2,850 ft.

WOOD COUNTY

Talko Oil Co.'s No. 1 G. T. Ross, B. L. Smith Sur. ..... S.D. 2,794 ft.
Wood County Dev. Co.'s No. 1 Davis, approximately 180 ft. from S line of 160-ac. tract and 2½ miles S of Kantes in Sarah McDonald Sur. ..... Moving in rig.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 50)

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Bobadella, 1,325 ft. from S and E lines Sur. 354, S.F. No. 7,347 ..... S.D. 2,257 ft.

FISHER COUNTY

Condor Petroleum Co.'s No. 1 Steele, 660 ft. from S and 330 ft. from W of W half of SE Sec. 210, B.B.B.&C. Ry. Sur. ..... Drlg. 2,300 ft.
Cranfill & Reynolds' No. 1 George, 400 ft. from N and 380 ft. from E Sec. 200, Blk. 1, B.B.B.&C. Sur. ..... T.D. 5,347 ft.; underreaming 5-in. csg. at 5,314 ft.
Sinclair-Prairie's No. 2 Steele, 250 ft. from N and W of NE Sec. 72, H.T.&B. Sur. ..... S.D. 2,392 ft.
Southern Oil Co.'s No. 1 Purdue, 990 ft. from S and E Sec. 202, Blk. B, B.B.&C. Sur. ..... Location.

GAINES COUNTY

McElreath et al's No. 1 Sparks, 330 ft. from N and E Sec. 397, Blk. G ..... Setting 20-in. csg. 120 ft.

GLASSCOCK COUNTY

Mann et al's No. 1 fee, 330 ft. from N and 1,980 ft. from E. Sec. 27, Blk. 34, Twp. 3s, T.&P. Sur. ..... Drlg. 2,640 ft.
Humble Oil & Ref. Co.'s No. 2 Arrington, 1,300 ft. from W, Sec. 32, Blk. 33, Twp. 2s, T.&P. Sur. ..... Standardizing 2,152 ft.
Penn Oil Co. et al's No. 1 F. A. Hobenstreit, 2,310 ft. from N and E lines of Sec. 47, Blk. 36, Twp. 3s, T.&P. Sur. ..... Drlg. 3,542 ft.

GARZA COUNTY

Penny & Posey's No. 1 Justice, 1,980 ft. from S and 1,650 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ..... S.D. 3,390 ft.

HOWARD COUNTY

American-Maracaibo's No. 5-A Settles, 1,896 ft. from N, 1,884 ft. from W, Sec. 6, Blk. 32, T.&P. Sur. ..... Shut down.
F. H. E. Oil Co.'s No. 1 Denman, 330 ft. from N, 2,310 ft. from E of Sec. 14, Blk. 30, T.&P. Sur. ..... T.D. 2,812 ft.; cleaning out after 400-qt. shot; T.P. 2,706 ft.
Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W, Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur.. Spudded and S.D.
Harrison's No. 2 Denman, 1,650 ft. from S and 355 ft. from E Sec. 10, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 2,470 ft. (corrected).
Myers et al's No. 1 Denman, 2,305 ft. from S and 2,320 ft. from E Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. ..... S.D. 1,030 ft.
Pure Oil Co.'s No. 12 Chalk, 1,650 ft. from N and E, Sec. 125, Blk. 29, W.&N.W. Sur. ..... Location.
Schermerhorn Oil Co.'s No. 5 Kloh, 660 ft. from S and W of Sec. 13, Blk. 32, Twp. 2s, T.&P. Sur. ..... Location.
Sinclair-Prairie Oil Co.'s No. 2 Dodge, 2,313 ft. from S and 300 ft. from W, Sec. 11, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 715 ft.
Wallace et al's No. 1 Belt, 1,960 ft. from N, 2,640 ft. from W, Sec. 12, Blk. 30-1s, T.&P. Sur. ..... T.P. 2,480 ft.; T.D. 2,855 ft.; rebuilding rig; swabbed 35 bbls. day.

IRION COUNTY

Apollo Oil Co.'s No. 4 Nutt, 504 ft. from N and 1,562 ft. from W of Subd. No. 6, Gonzales County School Land ..... Cellar.
Davis et al's No. 1 Suggs, 1,560 ft. from S and 925 ft. from W, Sec. 3,081, Blk. 28, H.&T.C. Sur. ..... Drlg. by tools 7,535 ft.
Johnson's No. 1 Tankersley, 1,340 ft. from S and 150 ft. from E, Sec. 726, F. Sockstedt Sur. ..... Drlg. 1,150 ft.
Stanolind Oil & Gas Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... S.D. 7,420 ft.

JONES COUNTY

Abers et al's No. 1 Burton, 150 ft. from S and 175 ft. from E of 42.4-acre tract in G. Martinez Sur. ..... S.D. 1,005 ft.; temp. abnd.
Johnson's No. 1 Huddleston, 165 ft. from S and W of N half of N half of Sec. 39, Blk. 18, T.&P. Sur. ..... Spudded and S.D.
J. M. Johnson's No. 1 Swann, 6,150 ft. from S and 1,550 ft. from E, I. Miley Sur. ..... Drlg. 276 ft.
Robert Oil Co.'s No. 1 Swann, 2,350 ft. from W and 2,920 ft. from S, I. Miley Sur. ..... Rig.
Smart & Reynolds' No. 1 Reynolds, 2,500 ft. from N and 150 ft. from W, Sec. 2, W. T. Scott Sur. No. 3.. Machine.
C. S. Spelling et al's No. 1 Lillie, 200 ft. from N and W Sec. 4, E. Miller Sur. No. 2 ..... S.D. 1,520 ft.
Transcontinental Prod. Co.'s No. 1 Rust, 5,800 ft. N and 995 ft. W of SE cor. J. J. Hughes Sur. 556 ..... Spudded.
Young et al's No. 1 Harrell, 150 ft. from S and E of N half of Sec. 8, O.A.L. Sur. ..... Location.

LOVING COUNTY

Eppenauer's No. 1 Freels, 1,263 ft. from NE, 410 ft. from NW, Sec. 92, Blk. 1, W.&N.W. Sur. ..... Drlg. 2,540 ft.
Covey et al's No. 1 Wheat, 2,310 ft. from SW, 330 ft. from SE, Sec. 3, Blk. 2, W.&N.W. Sur. ..... S.D. 1,300 ft.
Eppenauer Drlg. Co.'s No. 1 Allen, 465 ft. from NE and SE, Sec. 4, Blk. 2, W.&N.W. Sur. ..... Drlg. 2,710 ft.
Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S, Sec. 46, Blk. 53, T.&P. Sur. ..... S.D. 810 ft.
Falbre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW, Sec. 79, Blk. 33, H.&T.C. Sur. ..... Fishing 4,275 ft.
Goldman et al's No. 1 Allen, 330 ft. from NE and NW of Sec. 90, Blk. 1, W.&N.W. Sur. ..... Location.
Lewis & Slagel's No. 1 Johnson, 330 ft. from N and 1,650 ft. from W, Sec. 6, Blk. 56, Twp. 1, T.&P. Sur... S.D. 2,280 ft.
Martin's No. 1 Freels, 3,514 ft. from NE and 412 ft. from NW of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Drlg. 3,743 ft.
Martin et al's No. 1 Wheat, 990 ft. from SW and SE, Sec. 83, Blk. 1, W.&N.W. Sur. ..... Location.
Martin et al's No. 1 Brookfield, 330 ft. from N and W, Sec. 30, Blk. 29, P.S.L. ..... Drlg. 200 ft.
Miller et al's No. 1 Ferguson, 990 ft. from N and E of Sec. 44, Blk. 29 ..... S.D.
Tannant et al's No. 1 Martin, 990 ft. from NW and SW, Sec. 66, Blk. 1, W.&N.W. Sur. ..... T.D. 4,388 ft.; shot 110 qts. 4,345-88 ft.; cleaning out.
Thomas' No. 1 Wheat, 2,310 ft. from NW, 990 ft. from NE, Sec. 82, Blk. 1, W.&N.W. Sur. ..... S.D. 2,285 ft.

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.R.R. Sur. ..... S.D. 2,860 ft.

PECOS COUNTY

Anderson's No. 1 Lee Fever, 330 ft. from N and W of Sec. 78, Blk. 8, H.&G.N. Sur. ..... S.D. 2,037 ft.
Black et al's No. 1 Pecos Valley, 1,037 ft. from SE, 433 ft. from SW, Sec. 36, Blk. 3, H.&T.C. Sur. ..... T.D. 1,720 ft.; plugging.
Cardinal Oil Co.'s No. 2-G Tippett, 150 ft. from S and E, Sec. 62, Blk. 194, G.C.&S.F. Sur. ..... Drlg. 350 ft.
Corvette Oil Corp.'s No. 8 H. Monroe, 1,040 ft. from E line and 150 ft. from N line of Sec. 39, G.C.&S.F. Sur., Blk. 194 ..... Location.
Culberson Bros.' No. 8-B Monroe, 700 ft. from N and 790 ft. from E, Sec. 39, Blk. 194, G.C.&S.F. Sur. .... Drlg. 150 ft.
Gulf Prod. Co.'s No. 34 Yates, 13,415 ft. from W and 330 ft. from S of Runnells County School Land .... Set 10-in. csg. 1,065 ft.
Hampton et al's No. 1 Byrne, 1,980 ft. from NW and 1,500 ft. from NE, Sec. 54, Blk. 10, H.&G.N. Sur. ... T.D. 1,395 ft.; T.P. 1,358 ft.; S.D. for tubing.
Dittman's No. 1 Sanford, 330 ft. from NW and 1,650 ft. from NE of Sec. 55, Blk. 10, H.&G.N. Sur. ..... S.D. 1,454 ft.; to plug.

PRESIDIO COUNTY

Sadler et al's No. 1 Bledsoe, 2,640 ft. from N and W Sec. 15, Blk. 354, G.C.&S.F. Sur. ..... Drlg. 360 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 6-C University, 1,370 ft. fro mS and 1,000 ft. from E, Sec. 12, Blk. 2 ..... Fishing 8,367 ft.
Big Lake Oil Co.'s No. 7-C University, 1,570 ft. from W and 725 ft. from S, Sec. 25, Blk. 9 ..... Drlg. 3,220 ft.
Group Oil Corp.'s No. 5-B University, 2,700 ft. from S and 1,775 ft. from W, Sec. 36, Blk. 9 ..... Drlg. 225 ft.

REEVES COUNTY

F. McDorman et al's No. 1 Ray Roberts et al, 2,310 ft. from S and E lines of Sec. 22, Blk. 59, P.S.L. Sur. ... Drlg. 332 ft.
Southern Star Oil Co.'s No. 1 Wright, 1,320 ft. from S and W, Sec. 58, Cassel's Sur. ..... S.D. 75 ft.
Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur... S.D. 5,044 ft.

RUNNELS COUNTY

Blue Bonnett Oil Co.'s No. 1 McMillan, 1,368 ft. from N and 660 ft. from W, Sec. 22, N. Travis Sur. ..... Drlg. 1,568 ft.
Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 519 ..... S.O. 3,417-20 ft.; S.D. 3,600 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ..... Fishing 5,410 ft.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,302 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... S.D. 5,580 ft.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,670 ft. from W, G.H.&S.A. Sur. ..... S.D. 5,053 ft.

SCURRY COUNTY

G. E. Dickman et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, E.&T.C. Sub. ..... S.D. 5,050 ft.
W. S. Guthrie's No. 1 Snyder National Bank, 330 ft. from N and 2,310 ft. from E of Sec. 115, Blk. 97, H.&T.C. Sur. ..... Location.
Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W, Sec. 68, Blk. 3, H.&G.N. Sur. ..... Spudded and S.D.
Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ..... Drlg. 4,775 ft.

Jenkins hasn't missed a bet in this valve.

Fig. 106-A Jenkins Standard Bronze Globe Valve

Built Throughout
for *money-saving* service

Even into the spindle threads of this Fig. 106-A Jenkins, money-saving service has been built. More of these threads are in contact with the bonnet, assuring longer wear.

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TAYLOR COUNTY

Eastland Oil Co.'s No. 1 King, 150 ft. from S and E, Lot 37, Willis Sur. ..... Drlg. 2,432 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. ..... S.D. 2,269 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... S.D. 3,150 ft.; moved off tools.
Miller Bros.' No. 1 Allison & Burke, C NW Sec. 10, Blk. 176, T.&P. Sur. ..... S.D. 120 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F. Sur. .. S.D. 6,120 ft.
Jones et al's No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ..... S.D. 2,545 ft.
Sides et al's No. 1 Phelps, 2,157 ft. from N and 2,482 ft. from W, Sec. 5, G. W. Hurley Sur. ..... S.D. 1,435 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 1,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... S.D. 760 ft.; S.O. and gas 735 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur. .... S.D. 1,994 ft.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 ..... S.D. 300 ft.

UPTON COUNTY

Farley et al's No. 1-B Lone, 2,310 ft. from N and E, Sec. 36, Blk. 1, M.-K.-T. Sur. ..... T.P. 2,182 ft.; plugged back to 2,304 ft.; pumping.

VAL VERDE COUNTY

Couch et al's No. 1 J. P. Yoas, 1,300 ft. from the N line and E line of Sec. 81, Blk. 1 ,I.&G.N. Sur. ..... S. D. 220 ft.
Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... S.D. 5,360 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev 2,130 ft. ..... S.D. 6,780 ft.

WARD COUNTY

Abell Bros. et al's No. 1 Smith, 330 ft. from NE and NW, Sec. 4, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,075 ft.
Abell Bros.' No. 2 Smith, 2,310 ft. from SE and 2,020 ft. from NE, Sec. 4, Blk. 34, H.&T.C. Sur. ..... Location.
Abell Bros.' No. 3 Smith, 2,310 ft. from NE and NW, Sec. 4 ..... Location.
Bradford & Bentley's No. 1 B. Carson, 1,650 ft. from the NE line and 990 ft. from the SE line of Sec. 26, H.&T.C. Sur., Blk. ..... T.D. 860 ft.
Eastland Oil Co.'s No. 1 Weiss, 2,365 ft. from SE and SW, Sec. 4, Blk. 34, H.&T.C. Sur. ..... T.D. 2,361 ft.; flowed 288 bbls. in 15½ hrs.
Eastland Oil Co.'s No. 2 Weiss, 1,360 ft. from SW and 2,080 ft. from SE, Sec. 4, Blk. 34, H.&T.C. Sur. ..... Location.
Eppenauer's No. 1 Purcell, 365 ft. from SW and 1,650 ft. from SE of Sec. 17, Blk. 14, H.&T.C. Sur. ..... T.D. 2,740 ft.
Eppenauer Drlg. Co.'s No. 1 Townsend-Moore, 990 ft. from SE and 330 ft. from SW, Sec. 17, Blk. 34, H.&T.C. Sur. ..... Spudded and S.D.
H. V. Greer's No. 1 Carr, 150 ft. from NW and 510 ft. from SW, Sec. 12, Blk. 5, H.&T.C. Sur. ..... S.D. 2,145 ft.
Gulf Prod. Co.'s No. 11 Hutchings, 330 ft. from N and 990 ft. from W of 370 acres in S half Sec. 5, Blk. F .. Drlg. 1,150 ft.
Leydecker et al's No. 1 Bennett, 2,310 ft. from NW and NE, Sec. 16, Blk. 34, H.&T.C. Sur. ..... Spudded and S.D.
Massie et al's No. 1 Stewart, 330 ft. from SW and SE, Sec. 12, Blk. 14, H.&T.C. Cur. ..... Drlg. 2,428 ft.
Moran & Burkhart's No. 2 J. T. Sweatt et al, 3,310 ft. from SW, Sec. 1, J. Howe Sur. ..... Drlg. 1,735 ft.
Moran & Miles' No. 1 Boogher, 3,603 ft. from NE and 1,303 ft. from SE, Sec. 11, Blk. 5, H.&T.C. Sur. ..... T.P. 2,192 ft.; connecting up; drlg. 2,225 ft.; est. good for 20 bbls. day.
R. F. Owen's No. 1 Lee, 1,344 ft. from NW and 4,532 ft. from SW, Sec. 1, J. Howe Sur. ..... S.D. 1,670 ft.; underreaming 8¼-in. csg.
Plains Prod. Co.' and Simms Oil Co.'s No. 1 Benton Land Co., 440 ft. from the SE and 440 ft. from SW lines of Sec. 36, W.&N.W.R.R. Sur., Blk. 1 ..... Drlg. 1,310 ft.
Rector Oil Co.'s No. 1 Smith, 1,320 ft. from N and E, Sec. 22, Blk. A, G.M.M.B.&A. Sur. ..... S.D. 3,602 ft.
Renaud-Prettyman's No. 1 University, 330 ft. from N and E Sec. 4, Blk. 16 ..... S.D. 400 ft. (corrected).
Richardson et al's No. 8 O'Brien, 1,372 ft. from N, 330 ft. from W, Sec. 5, Blk. F ..... Drlg. 2,750 ft.
Richardson et al's No. 9 O'Brien, 1,112 ft. from N and 990 ft. from W Sec. 5, Blk. F ..... Drlg. 2,387 ft.
Rixford et al's No. 1 Green, 330 ft. from NW and SW Sec. 4, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,272 ft.
Sturm-Simms Oil & Gas Co.'s No. 2 Jones, 1,650 ft. from NE and 330 ft. from SE, Sec. 25, Blk. B-29, P.S.L. .. Drlg. 670 ft.
Thomas et al's No. 1 Bennett, 2,310 ft. from NE and SE, Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 325 ft.
White et al's No. 1 Burtner, 150 ft. from NE and 515 ft. from SE of Sec. 8, Blk. 32, H.&T.C. Sur. ..... S.D. 755 ft.

WINKLER COUNTY

Adams et al's No. 1 Scarborough, 660 ft. from N and E Sec. 1, Blk. 77, P.S.L. ..... Cmtd. 6⅝-in. csg. 2,665 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending May 23

BRISCOE COUNTY

Company, well, farm name, section and block— Remarks:
Humble O. & R. Co.'s No. 1 C. Adair est., 2,500 ft. from N line, 2,100 ft. from E line, Sec. 7, Blk. G-6 ..... Coring 3,720 ft.

CARSON COUNTY

Danciger's No. 4 Byrum, 330 ft. from N and E, Sec. 188, Blk. 3, I.&G.N. Sur. ..... Cellar.
H. A. M. Oil Co.'s No. 2 Cooper, 330 ft. from S and E, Sec. 5, Blk. 9, I.&G.N. Sur. ..... Location.
Pulse-Shell Pet. Corp.'s No. 1 Byrum, 330 ft. from N and W, W½ NE, Sec. 188, Blk. 3, I.&G.N. Sur. .... Drlg. 2,110 ft.
Skelly Oil Co.'s No. 10 E. Schaffer, 440 ft. from S, 2,640 ft. from E of N half, Sec. 189, Blk. 3, I.&G.N. Sur. .... Rigging up rotary.
Skelly Oil Co.'s No. 17 West Schaffer, 1,320 ft. from S, 440 ft. from E, Sec. 87, Blk. 4, I.&G.N. Sur. ..... Drlg. 2,605 ft.
The Texas Co.'s No. 1-C Garner, 990 ft. from N and E. NW, Sec. 94, Blk. 4, I.&G.N. Sur. ..... Building derrick.
Texoma Nat. Gas Co.'s No. 1-T Jordan, 1,382 ft. from S, 1,324 ft. from E, Sec. 83, Blk. 4, I.&G.N. Sur. ..... Ran 10-in. csg. 690 ft.

CHILDRESS COUNTY

C. L. Sloan et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands ..... T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur. ..... S.D. 2,508 ft.
Downey et al's No. 1 Beasley, SE cor. SW SE, Sec. 95, Blk. 15, H.&G.N. Sur. ..... Rigged up.

DEAF SMITH COUNTY

Western Union Oil Co.'s No. 1 Farwell, C NW, Sec. 18-3n-2e ..... S.D. 275 ft.

GRAY COUNTY

Back & Barber's No. 1 Back, 460 ft. from S, 330 ft. from W, Sec. 140, Blk. 25, H.&G.N. Sur. ..... S.D. 2,428 ft.
Boyes et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur. ..... Drlg. 375 ft.
Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur. ..... T.D. 3,305 ft.; fishing.

Continental Oil Co.'s No. 1-A Wright, 330 ft. from S and E of E½ NW, Sec. 13, Blk. 3, I.&G.N. Sur. ....T.D. 2,433 ft.; ran 8-in. csg.; gas 2,353-2,412 ft.

Danciger O. & R. Co.'s No. 9 Powell-Beck, 330 ft. from N, 1,605 ft. from W, Sec. 28, Blk. B-2, H.&G.N. Sur...Spudded.

Danciger O. & R. Co.'s No. 2 William, 150 ft. N, 990 ft. from W S half NW, Sec. 7, Blk. 1, A.C.H.&R. Sur....Drlg. 2,065 ft.

Elbar Corp.'s No. 1 Sethinga, 330 ft. from S and E, Sec. 12, Blk. A-9, H.&G.N. Sur. .....Rig.

Foster's No. 1 Webb, 330 ft. from S and W, Sec. 43, Blk. 25, H.&G.N. Sur. .....S.D. 2,390 ft.; show oil 2,375 ft.

Graham et al's No. 1 Barrett, 990 ft. from N, 330 ft. from E, Sec. 112, Blk. 3, I.&G.N. Sur. .....Drlg. 2,135 ft.

Granite Prod. Co.'s No. 1 Chapman, 275 ft. from N line, 110 ft. from W line, S½ SW, Sec. of Blk. 26, H. &G.N. Sur. .....S.D. 2,675 ft.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. 2-B, H.&G.N. Sur. .....Drlg. 3,065 ft.

Jewel Oil Co.'s No. 1 Meers, 330 ft. from S and W, NW SW, Sec. 106, Blk. 3, I.&G.N. Sur. .....Fishing 3,325 ft.

Mazda-Shell's No. 2 Worley Reynolds, 660 ft. from S and E of NE, Sec. 35, Blk. 3, I.&G.N. Sur.....Spudded.

Mid-Kansas O. & G. Co.'s No. 1 Webb, 990 ft. from N, 330 ft. from W, NE Sec. 61, Blk. 25, H.&G.N. Sur. ..Drlg. 2,085 ft.

Nipper et al's No. 1 Morse, 330 ft. from N and E, Sec. 1, Blk. 26, I.&G.N. Sur. .....Fishing 2,635 ft.

Nabob Oil Co.'s No. 1-E Morse, 330 ft. from S and W, W½ SE, Sec. 67, Blk. 25, H.&G.N. Sur. .....Spudded.

Operators Royalty & Prod. Co.'s No. 2 Arnold, 330 ft. from S and W, Sec. 149, Blk. 3, I.&G.N. Sur. .....Rig.

Operator's No. 1 Ferguson, 330 ft. from N and E of NW, Sec. 34, Blk. B-2, H.&G.N. Sur. .....T.D. 3,076 ft.; testing.

Parton & Holt's No. 2 Morse, 330 ft. from W, 250 ft. from N, W½ SW, Sec. 5, Blk. 26, H.&G.N. Sur. .....Drlg. 1,300 ft.

Phillips Pet. Co.'s No. 6 Wood-Wright, 330 ft. from N and E, Sec. 13, Blk. 3, I.&G.N. Sur. .....S.D. 2,870 ft.; made 300 bbls. oil in 24 hrs.; straightreaming 5-in. csg.

Pulse-Shell Pet. Corp.'s No. 1 Culler, 330 ft. from S and E, Sec. 173, Blk. 3, I.&G.N. Sur. .....Drlg. 300 ft.

Pulse-Shell's No. 1 Brown, 290 ft. from N, 250 ft. from E of NW, Sec. 128, Blk. 3, I.&G.N. Sur.....Rig.

Saulsbury et al's No. 1 Davidson, 330 ft. from S and W, Sec. 87, Blk. B-2, H.&G.N. Sur. .....T.D. 1,109 ft.; underreaming 10-in. csg.

Saunders et al's No. 2 Sullivan, 822 ft. from W, 231 ft. from NE, 160 ft. S, 264 ac. of N½, Sec. 136, Blk. 3, I.&G.N. Sur. .....Will plug back to 3,275 ft. and shoot.

Shamrock O. & G. Co.'s No. 3 Saunders, 330 ft. from S and W, Sec. 40, Blk. 3 .....T.P. 2,977 ft.; drlg. 3,000 ft.; 2,000 ft. oil in hole.

Skelly Oil Co.'s No. 8 East Schaffer, 220 ft. from N, 440 ft. from W, Sec. 172, Blk. 3, I.&G.N. Sur. .....Fsg. 3,256 f.t; T.P. 3,212 ft.; 1,400 ft. oil in hole.

Skelly Oil Co.'s No. 9 East Schaffer, 1,320 ft. from S, 440 ft. of N½, Sec. 189, Blk. 3, I.&G.N. Sur. .....Drlg. 2,960 ft.

Tarber's No. 1 Saunders, 330 ft. N and W, Sec. 3, Blk. 1, B.B.&S.F. Sur. .....Location.

Tedesco Oil Co.'s No. 2 Morse, 330 ft. from N and E of NE SW, Sec. 1, Blk. 25, H.&G.N. Sur. .....Bldg. rig.

The Texas Co.'s No. 7 Wright, 330 ft. from N and W, Sec. 13, Blk. 3, I.&G.N. Sur. .....T.D. 2,600 ft.; underreaming 6⅝-in. csg.

The Texas Co.'s No. 9 Williams, 150 ft. from S, 990 ft. from N half NW, Sec. 7, Blk. 1, A.C.H.&B. .....Drlg. 2,225 ft.

The Texas Co.'s No. 10 Cook-Faulkner, 330 ft. from S, 1,605 ft. from W, Sec. 29, Blk. B-2, H.&G.N. Sur.....Drlg. 375 ft.

Travis' No. 3 Back, 330 ft. from S, 2,300 ft. from E, Sec. 44, Blk. 25, H.&G.N. Sur. .....T.D. 2,395 ft.; cmtd. 6-in. csg.

Weltzel Oil Co.'s No. 2 Morse, 330 ft. from S and E of N half NW, Sec. 67, Blk. 25, A.&G.N. Sur. .....Rigging up standard tools.

HEMPHILL COUNTY

Hoover's No. 1 Hoover, 350 ft. from N, 1,200 ft. from E, G. S. Hood Sur. .....To deepen old well; T.D. 5,055 ft.; rigging up.

HUTCHINSON COUNTY

Baso's No. 1 Moore, 330 ft. from S, 330 ft. from E, in 80 ac. in NW, Sec. 21, Blk. M-21, T.C.R.R. Sur. .....T.D. 3,080 ft.; shot 100 qts. 3,028-64 ft.; testing.

Combination O. & G. Co. and Alspaugh's No. 1 Johnson, 330 ft. from S line, 330 ft. from E line, NW SW, Sec. 4, Blk. Y, A.&B. Sur. .....Drlg. 2,800 ft.

Danciger O. & R. Co.'s No. 1 Johnson, 330 ft. N and W, SE, Sec. 34, Blk. Y, A.&B. Sur. .....Spudded and S.D.

Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. ...S.D. 450 ft.

Holmes & Newblock's No. 2 Moore-Langdon, 330 ft. from N and W, Sec. 125, Blk. 4, I.&G.N. Sur. .....Rig.

Huber Pet. Co.'s No. 1-A Weatherly, 330 ft. from N and W, Sec. 26, Blk. Y, A.&B. Sur. .....Drlg. 2,160 ft.

Liner Drlg. Co.'s No. 1-D Johnson, 330 ft. from N and E, Sec. 6, Blk. 1, B.&B. Sur. .....Plugged back to 3,146 ft.

Pharis Oil Co.'s No. 5 Smith, 660 ft. from N and W, SW, Sec. 14, Blk. Y, M.&C. Sur. .....Spudded.

Timms-Deatch's No. 4 Moore, 330 ft. N and W, Sec. 124, Blk. 4, I.&G.N. Sur. .....Rig.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. .....T.D. 5,003 ft.

MOORE COUNTY

Dogie Oil Co.'s No. 1 Greenwald, 330 ft. from N and W, Sec. 277, Blk. 44, H.&T.C. Sur. .....S.D. 205 ft.

Dana O. & G. Co.'s No. 1 Robertson et al, 330 ft. from S and E, Sec. 165, Blk. 3-T, T.&N.O. Sur. .....Cellar.

Interstate's No. 1 Nield, C NE, Sec. 18, Blk. 44, H.&T. C. Sur. .....Rig up.

Magnolia Pet. Co.'s No. 1 Nield, 330 ft. from S and E, N½, Sec. 361, Blk. 44, H.&T.C. Sur. .....T.D. 3,646 ft.; plugged back 3,626 ft.; shot 40 qts. 3,416-34 ft.; no results.

Pollard et al's No. 1 Hall, 330 ft. S and E, NE, Sec. 121, Blk. 3-T, T.&N.O. Sur. .....Rig on ground.

Sunray Oil Co.'s No. 2 Jones, 330 ft. N and W, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. .....Rig on ground.

Sunset Oil Co.'s No. 1 Dore, 330 ft. from N and W, W½, Sec. 318, Blk. 44, H.&T.C. Sur. .....Drlg. 3,601 ft.; show oil 3,590 ft.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. .....S.D. 530 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur.....S.D. 400 ft.

Chambers et al's No. 1 Herring, CNL, Sec. 20, Blk. S, G.C.&S.F. Sur. .....S.D. 3,711 ft.

PARMER COUNTY

Magnolia Pet. Co.'s No. 1 Wilson, 330 ft. from N and W, SE, Sec. 73, H. Kelly Sur. .....Drlg. 4,700 ft.

POTTER COUNTY

Red River Gas Co.'s No. 7-A Bivins, center SW, Sec. 38, Blk. M-20, G.&M. Sur. .....Standardizing 2,290 ft.

ROBERTS COUNTY

Chicken Creek Oil Co.'s No. 1 Ledrick, 330 ft. N and W, Sec. 55, Blk. C, G.&M. Sur. .....T.D. 3,990 ft; to set 8-in. csg.

Travis et al's No. 1 Cunningham, 330 ft. S and W, Sec. 74, Blk. M-2, H.&G.N. Sur. .....S.D. 2,690 ft.

WHEELER COUNTY

Devore & Robinson's No. 1 Sitter, 2,310 ft. from S and E, E½, Sec. 33, Blk. 24, H.&G.N. Sur. .....S.D. 2,559 ft.; 15,000,000 ft. gas.

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THE INK BOTTLE

Sinclair Prairie Connects Stripper Wells

Old Wells Have Pipe Line Outlet, After Being Temporarily Cut Off. Valley Center Pool Extended. Developments in Central West

By W. A. Spinney
Staff Correspondent, Kansas Fields

Sinclair Prairie Crude Oil Marketing Co. has agreed to take the crude oil production from stripper wells in the southeastern part of Kansas. The announcement of the agreement was made by Governor Woodring after a conference at Topeka with officials of the company.

The agreement will provide an outlet for the production from all stripper wells which were left without a market.

The Standard Oil Co. of Indiana and several other concerns have been buying this distress oil until recently a market outlet was provided for the strippers but on May 23 the Standard Oil Co. withdrew as a purchaser leaving approximately 2,250 bbls. of this oil without any market.

It is estimated that approximately 6,500 wells will be affected by the change. These wells are located in all the eastern tier of counties, east of a line drawn through Cowley, Butler and Marion Counties.

The Stanolind Crude Oil Purchasing Co. reduced its purchases in the central western part of the State on May 23. The company gave notice to all producers that it was withdrawing entirely as a purchaser of crude oil from the four producing wells in Stafford County, three wells in Russell County, served by the Homer and Balta loading racks, and from the seven wells in southwestern Ellsworth County, served by the Holyrood loading rack, and one well in Rush County, served by a loading rack at Shaffer. The company has also reduced its purchases from 15 per cent to 5 per cent of the allowable production effective May 23, in the Raymond district, which includes the Schurr Pool, and the Sharpe Pool, both in Rice County and the Isern Pool in Barton County.

Wright Pool Extended

The Wright Pool, near Valley Center, was extended during the week by the Continental Oil Co. and Gypsy Oil Co.'s No. 1 Bishop, NW cor. NE Section 13-26-1w, which was slopping over with oil from the chat at 3,058-3,160 feet. The first showing of oil was found at 3,058-66 feet where it made 2 bbls. of oil an hour, and drilling was continued to the present total depth where the oil rose to the top of the hole. A production test will be made of the oil showing. The well is more than a half mile southwest of the production in the Wright Pool. This extension well is expected to result in several additional tests in the vicinity.

The finding of oil and gas in a wildcat test southeast of the Ritz-Canton Pool is also expected to result in additional activity in that area. Detrick and others' No. 1 Sinclair, SE cor. SW Section 25-19-1, was making 4,000,000 feet of gas and spraying considerable oil. The oil and gas were found in the chat at 2,926-51 feet.

In the central western part of the State, Gypsy Oil Co. and T. Palmer's No. 2 Stoltenberg, NW cor. NE SW Section 22-16-10w, Ellsworth County, located between two large producers, found the Siliceous lime at 3,337-58 feet, with only a showing of oil. It filled up 500 feet with oil in five hours and may be drilled deeper and shot.

In the Sharpe area in western Rice County, Empire Oil & Refining Co.'s No. 1 Masemore, SW cor. NW Section 17-20-9w, is the second well to produce in the area. The oil rose rapidly in the hole and was slopping over from the Siliceous lime at 3,315-22 feet. The well is east of the discovery well in the area.

A wildcat well completed about two years ago is to be opened and produced. The well is Carter Oil Co., Shell Petroleum Corp., J. H. Tatlock and others' No. 1 Ploog, C SW SE Section 33-18-9w, Rice County, which was completed in August, 1930, when it made 712 bbls. of high gravity oil in four hours, from the Siliceous lime at 3,249-53 feet, and was estimated to be a 2,000-bbl. well pumping. It has been shut in since that test. When opened up a few days ago the well flowed at the rate of 25 bbls. an hour through an 8-inch pipe for three hours. The oil is expected to be shipped to a Canadian refinery. A 4-inch pipe line will be constructed from the well at a loading rack on the Frisco railroad at Pollard.

The McPherson Pool

To the north of the McPherson Townsite W. C. Snyder and others' No. 1 Carlson, SE cor., Section 4-19-3w, is moving in material to drill a wildcat test. J. W. Brennan and others' No. 1 Magnuson, SW cor. NW NW, Section 25-19-3w, is a new location north of the newly discovered production. The new Johnson area southeast of the townsite of McPherson in the same county is becoming a promising producing district. The discovery well was completed a few months ago and five wells have been completed in the pool with an estimated potential of 5,000 bbls. a day, all of which are shut in awaiting a pipe line outlet. A recent well completed in the district is the Shell Petroleum Corp.'s No. 1 Lawrence, SE cor. NW, Section 35-19-3w, completed as a combination well, the gas gauging 24,440,000 feet and 265 bbls of oil in five hours. The oil and gas were found in the chat at 2,964-3,005 feet.

The Texas Company's No. 1 in the NW cor. NE, Section 2-20-3w, is drilling and the Shell Petroleum Corp.'s No. 2 Johnson, SE cor. SW NW, Section 2-20-3w, is a location.

The largest well in the McPherson Pool is the Mid-Kansas Oil & Gas Co.'s No. 1 Bridgen, NE cor. NW SE, Section 2-20-3w, which swabbed 1,495 bbls. of oil in a 12-hour swabbing test from the chat at 2,976-3,030 feet.

The production in the new area was extended to the townsite of McPherson during the week by the completion of the sixth well, which may result in the drilling of town lots on the south side of McPherson. L. W. Prunty and others' No. 1 Kasey, SE cor. NW NW, Section 35-19-3w, is estimated at 750 bbls a day. The well is located within 2,000 feet of the city limits. A town lot leasing play is under way. Several operators are planning to seek permits to drill on lots in the southeast edge of McPherson.

Another recent test showing oil in the Greenwich area of Sedgwick County is the Gypsy Oil Co.'s No. 6 Hammant, SE cor. NW NW, Section 14-26-1. It found the chat at 2,859 feet, and at 2,865 feet oil rose 1,100 feet in the hole. On a swabbing test it made 40 bbls. of oil an hour and it was estimated at 800 bbls. a day.

Derby Oil Co.'s No. 1 Rainbow, NW cor. SE, Section 33-22-7w, Reno County, found the Silicious lime at 3,940-66 feet where a hole full of water was found. The company plans to plug the test back to the chat formation where a core showed a saturation of oil.

New Wildcat Operations

Development of wildcat acreage in the State is increasing. Reports of new operations for the week ending May 18 show eight new tests, in Butler, Ellsworth, Greenwood, McPherson and Sedgwick Counties. All of the locations are said to have been the result of geophysical surveys in addition to core drill surveys.

The development of the flush areas in the State has been conservative during the last year, as the crude oil outlet has been restricted. The largest field is Ritz-Canton in McPherson County, with a potential rated at 110,800 bbls. daily from 139 wells, as of May 1. The other important area known as the Barton-Ellsworth Arch Field, made up of numerous pools in the central western part of the State, has a rated potential of 38,734 bbls. from 30 wells as of May 1. Both of these areas are only partly developed and at present are only producing a small percentage of their potential oil production. The daily average of the State during the last few months has been around 97,000 bbls., while the State's potential is estimated at 175,000 bbls. a day. The State's allowable is now 110,000 bbls. daily.

An interesting wildcat test is starting in Barton County about 3½ miles west of the Isern Pool, in the same county. The test is Midwest Refining Co.'s No. 1 in the C SW SE Section 9-20-11w. A rotary outfit is to be used. The location is on a block of 12,000 acres, and on a short term lease near the center of the block, forcing the drilling of the well. This location was made after a core drill and seismograph survey had been made.

The location is near the Arkansas River bed which was leased by the State to Stearns & Streeter and the Derby Oil Co. The river bed lease extends a distance of about 6 miles. The river bed varies from 200 feet to a half mile in width and covers hundreds of acres. At the nearest point to the wildcat test of the Midwest the distance is about three-quarters of a mile, to the north and east of the location. The river is not navigable at this point.

Chautauqua County

Murphy and others' No. 1 First National Bank, SW cor. SE NW, Section 8-33-11, is a machine.

Cowley County

B. Gorelapp and others' No. 1 Weigle, SW cor. NW, Section 9-32-4, is a location. Trees and Brewer's No. 1 Armstrong, C SE SW, Section 1-32-6, is spudding.

Barton County

Midwest Refining Co.'s No. 29 Scheufler, C SW SE, Section 9-20-11w, is a rig.

Ellsworth County

Slick and others' No. 1 Dreford, SW cor. NW, Section 7-17-10w, is a location. Gypsy Oil Co.'s No. 1 McKinley, SW cor. NW NW, Section 6-17-9w, is a rig.

Greenwood County

Harwood Oil Co.'s No. 4 Carson, NE cor. NW SW NE, Section 33-23-11, is a location. Ward & McGinnis' No. 5 Edwards, SE cor. SW NE, Section 33-23-11, is a machine. Lykes and Empire Oil & Refining Co.'s No. 1 Patterson, C NW SW NW, Section 36-23-11, is a machine. Simmons and Amerada Petroleum Corp.'s No. 9 Ellis, SW cor. SE SW, Section 26-23-11, swabbed 17 bbls. of oil from sand at 1,851-71 feet, after a 40-quart shot. Ward McGinnis' No. 2 Edwards, SE cor. NW NE, Section 33-23-11, swabbed 430 bbls. of oil from sand 1,954-88 feet, after a 140-quart shot. Central Petroleum Co.'s No. 5 Sheets, NW cor. SE NE, Section 23-22-11, was abandoned at 1,925 feet, as a dry hole. Aikman & Young's No. 2 Strickland, SW cor., Section 14-22-13, was plugged and abandoned at 1,890 feet.

McPherson County

Shell Petroleum Corp.'s No. 2 Johnson, SE cor. SW NW, Section 2-20-3w, is a location. The Texas Company's No. 1 Tipton, NW cor. NE, Section 2-20-3w, is spudding. Mid-Kansas Oil & Gas Co.'s No. 1 Casey, NE cor. SW NW, Section 35-19-3w, is a location. McBride, Inc.'s No. 3 Lovett, SE cor. SW, Section 13-19-2w, is a rig. Lario Oil & Gas Co. and others' No. 2 Law, NW cor. NE, Section 24-19-2w, is a rig. Detrick and others' No. 1 Dalke, NW cor. SE, Section 16-19-1, is spudding. Olsen and Shell's No. 1 Johnson, NE cor. SE, Section 29-19-1w, made 50 bbls. of oil and 5 bbls. of water from the chat at 2,986-3,000 feet. Mid-Kansas Oil & Gas Co.'s No. 1 Bridgen, NE cor. NW SW, Section 2-20-3w, flowed 2,990 bbls. of oil from the chat at 2,976-3,030 feet.

Morris County

Kastle and others' No. 1 Furney, NE cor, SE, Section 16-16-8, was abandoned at 60 feet.

Reno County

Olson Drilling Co. and Shell Petroleum Corp.'s No. 1 Duckworth, C SE NE, Section 23-23-4w, is a rig. Olson Drilling Co. and others' No. 1 Reiger, C SE SE, Section 24-23-4w, made 210 bbls. of oil and 1,500,000 feet of gas from sand at 3,266-3,375 feet.

Rice County

Langston and others' No. 1 Wells, NE cor. SE, Section 4-20-9w, is a location. R. Ramsey and others' No. 1 Helton, SW cor. NE SW, Section 6-20-9w, is a location. Rogers and others' No. 3 Rainet, NE cor. NW SE, Section 3-21-6w, is spudding. National Refining Co.'s No. 1 Sherman, SE cor. SW, Section 16-19-9w, is a location.

Sedgwick County

Rosenthal-Continental Oil Co.'s No. 1 Green, C S half SW SW, Section 15-25-1, is a rig. Continental Oil Co.'s No. 1 Rouch, NW cor. NE SE SE, Section 16-25-1, is a rig. Shell Petroleum Corp.'s No. 4 Lygrisse, NW cor. SE NE, Section 15-26-2, swabbed 555 bbls. of oil and 45 bbls. of water from the chat at 2,868-2,901 feet.

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location—	Remarks:
Skelton Oil Co.'s No. 1 Ott, C SE SE, Sec. 16-19-14w	Set liner 3,530-46 ft.; show oil; drlg. 3,590 ft.

BUTLER COUNTY

Cameron-Great Basin Oil Co.'s No. 1 Lardson, C SE NW Sec. 13-23-2	Rig.
Ramsey's No. 1 Michael, SW NW NW Sec. 13-27-3	Location.

DICKINSON COUNTY

Severe et al's No. 1 Lavengood, NE SW, Sec. 13-13-2	S.D. 4,752 ft.

DOUGLASS COUNTY

Hewitt's No. 1 Dodder, CWL SW SW, Sec. 7-15-18	Water 1,330-35 ft.; S.D.

EDWARDS COUNTY

Mid-Kansas O. & G. Co.'s No. 1 Converse, SW NE NE, Sec. 30-24-18w	S.D. 2,845 ft.

ELLSWORTH COUNTY

R. Gear et al No. 1 Kroboth, SE NW Sec. 12-15-10w	Rig.
Johnson Vickers' No. 1 Claussen, C SE NW Sec. 31-15-10w	Drlg. 500 ft.
R. Gear et al's No. 1 Sanberth, C SW SE, Sec. 29-16-9w	S.D. 50 ft.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Smith, SE Sec. 24-8-25w	R.O.G.

GREENWOOD COUNTY

York State's No. 1 Lifebare, NE NW NE Sec. 14-23-11	Location.

(Continued on Page 59)

Osage County Revived By Deep Gusher

Silicious Lime Well in Hominy District. Martial Law Lifted in Oklahoma by Acting Governor. Southern Area Active

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Oklahoma's crude oil production shows a reduction of 12,000 bbls. a day in the past week, compared to the production of the previous week. The daily average was approximately 430,250 bbls. a day. The Oklahoma City Field averaged only 99,490 bbls. a day, while the allowable is 105,000 bbls.

The outstanding wildcat completion of the week was Peters Petroleum Co. and Producers & Refiners Corp.'s No. 1 in the SE NW NE, Section 24-24-7, Osage County, just east of the naval oil reserve. The test found oil and gas in every sand drilled. The Hominy sand yielded approximately 150 bbls. per day at 2,732-37 feet. The well was drilled deeper to the Silicious lime where it started flowing at the rate of 160 bbls. an hour from 2,768-92 feet. It made 92 bbls. of oil in 30 minutes, and in five hours flowed 1,200 bbls. of oil, which filled the tankage on the lease. The well was then shut in. The well is about 1½ miles from the nearest production in the county. It is located on a tract purchased some years ago.

The wildcat test, Sovereign Oil Co.'s No. 1 Selacek, NE cor. SE, Section 3-12-5, Lincoln County, found water in the Wilcox sand at 4,563-71 feet, and was shut down. The well has 3,500 feet of oil in the hole from the Viola lime at 4,476-89 feet. The oil is black and tested 29 degrees gravity, corrected. Another showing of oil was found in the Hunton lime and a showing of gas was found in the Peru sand. It may be plugged back to the upper horizons and tested.

Operations in southern Oklahoma were steady with activity increasing around the old Empire Pool, in Stephens County. Operators are attempting to enlarge the producing area of the field 3 miles south and 5 miles west of Duncan. Two operations are under way in the Tatums Pool, in Carter County. These are the first signs of drilling activity in this field for several months. Carter Oil Co.'s No. 1 Carson, SE cor., Section 12-3-8w, Grady County wildcat, was drilling at 3,200 feet on the last reports.

The Monett area in southern Pottawatomie County, which was opened by the Carter Oil Co.'s No. 1 Monett, SW cor., Section 35-7-4, has a number of other tests that are expected to reach the pay horizon in the next few days. The Carter Oil Co.'s well made 530 bbls. of oil on the swab, producing from the Simpson sand at a total depth of 4,262 feet.

Martial Law Ended

The military enforcement of the proration rules and regulations was removed during the week by an order issued by Lieut. Robert Burns, acting governor He rescinded the executive order of Governor Murray of last August.

It is believed from the order that Burns favored the return of full power to the Oklahoma Corporation Commission, and that he considered that the military order was not needed. Governor Murray was out of the State at the time the removal order was issued. The commission's power was upheld by a recent decision of the U. S. Supreme Court in the Champlin Refining Co.'s case.

A copy of the order revoking the military rule was transmitted to Adj. Gen. C. F. Barnett, who issued a military order declaring all officers and guardsmen in the field relieved from duty. The adjutant general said that only two officers, Lieut. M. Murray and Lieut. J. C. Callihan, were on duty, both in the Oklahoma City Field.

Governor Murray's military orders have been modified from time to time so that for the last few weeks all proration has been under the Corporation Commission, the adjutant general said. The officers and guardsmen in the field have been working under the direction of the field umpire, Ray M Collins, and have been paid by oil operators with production in the field.

Before Governor Murray left the State he declined to lift martial law, notwithstanding the decision of the Supreme Court, declaring that lower federal courts might issue injunctions and then oil would be run pending appeals.

Stanolind Curtails Purchases

An important announcement was made by the Stanolind Crude Oil Purchasing Co. stating that the company would curtail its crude oil purchases in the State. The exact amount of crude oil to be purchased in Oklahoma has not been decided upon. The reductions have extended to adjoining states and were occasioned by reduced demands from the refineries of the Standard Oil Co. of Indiana. The curtailment does not affect the stripper wells in the northeastern part of Oklahoma, from which the Stanolind company has been purchasing.

The Stanolind Crude Oil Purchasing Co. has been one of the largest purchasers of crude oil in the State since the Prairie Oil & Gas Co. ceased purchasing crude oil January 1, 1931. In the Oklahoma City Field the Stanolind has been buying approximately 20,000 bbls. daily for some time, while its last nomination was only 18,000 bbls. daily. In the past the company has always purchased the amount of oil it nominated over the proration periods and in several instances it has increased its purchases from the Oklahoma City Field.

The future development in the Greater Seminole area is expected to be from shallow sands that were passed up while the wells were drilling to the Wilcox sand. Operators are preparing to check the well logs in search for shallow sands on their proven leases.

Several companies are believed to be preparing to make a survey of the samples from the old producing wells and later to seek the shallow horizons, the Calvin, Wewoka and Cromwell sand series which were passed up in the early development of the field. From recent indications it is believed that many of the old Wilcox sand wells have now reached near exhaustion and many may be plugged back to the upper sands for a production test. These upper horizons have been found profitable in several districts in the Greater Seminole area.

There is some work in the different pools where wells are being reconditioned and some have been plugged back while others have been drilled deeper to test the horizons below the Wilcox sand, but only in a few cases has deeper drilling been beneficial.

A community wildcat in Pottawatomie County now being operated by the Gypsy Oil Co. was opened during the week and is flowing at the rate of 60 bbls. an hour. The well is No. 1 Gray, NE cor. SW, Section 25-6-4. It made 1,473 bbls. in 21 hours on a production test. It will be pinched to 50 bbls. a day under the proration regulations and further drilling operations in the district will be curtailed as the entire section has been unitized.

The wildcat test of the Clara Oil Co. and others' No. 1 Brown, SW cor. NW NE, Section 1-9-4, 1½ miles northwest of the Earlsboro district in the Greater Seminole area, found water in the Wilcox sand at 4,537-39 feet and may be abandoned.

Another wildcat in Lincoln County found water in the Wilcox sand and may be plugged after finding a showing of oil in the Simpson sand. Hilton Phillips and others' No. 1 Phillips, SW cor. NW, Section 2-14-3, was drilled to a total depth of 5,080 feet where a hole full of water was found. The showing of oil was found at 5,034 feet, where it swabbed 60 bbls. of oil and later filled up with water and was drilled deeper.

The Pure Oil Co.'s No. 1 Pinkston-Oglesby, SE cor. NW, Section 1-15-6, Lincoln County, located just over the Creek County line, is being prepared to land casing to test the showing of oil found after having been drilled deeper into the Wilcox sand. The hole is being reamed to a total depth of 3,648 feet, where the 5-inch casing will be landed and a production test made. The Wilcox sand was found from 3,648-3,705 feet. The well made 75 bbls. on a 2-hour test.

Seminole Production

The production from the Greater Seminole area for the week ending May 20, was approximately 141,765 bbls. a day. The Seminole Field, which includes the first 12 pools listed below, averaged 102,810 bbls. a day. The field is being produced at approximately 44 per cent of its potential capacity:

Pool—	Bbls.
Little River	19,375
East Little River	2,870
Carr City	11,555
Maud	2,105
Mission	7,495
Bowlegs	13,045
Earlsboro	14,390
South Earlsboro	2,090
East Earlsboro	13,495
Seminole	11,500
Searight	3,775
Total	102,810
Allen	8,795
Asher	565
Wanette	3,775
Konawa	4,980
Sasakwa	1,885
St. Louis-Pearson	18,955
Grand total	141,765

In Oklahoma City

Oil production in the Oklahoma City Field was extended a quarter of a mile west during the week in the south end of the field. The Indian Territory Illuminating Oil Co.'s No. 1 G. Lord, SE cor. NE NE Section 35-11-3w, was estimated to be flowing at the rate of 300 bbls. an hour from the Wilcox sand at 6,551-6,620 feet. The well is a quarter of a mile west of production on the same company's school land lease in Section 36-11-3w. This producer is offset by three rigs that are shut down for 58 days under the proration rules. It is on the trend extending southeasterly from production in Section 22-11-3w, and is on what is believed to be the outer rim of the Wilcox sand which extends the entire length of the field from the northwest to the southeast.

A well threatened to get out of control during the week when the Western Bond & Share Co. and others' No. 1 Meyers, SW cor. NW NW Section 2-11-3w, in the north end of the field, cut the connections while flowing into the pits on its first test. There was no gauge made of the fluid. The 6-inch casing was landed at 6,275 feet and the total depth of the hole is 6,405 feet.

On the north edge of the field, Phillips Petroleum Co.'s No. 1 Rock Island, SW cor. NW SW Section 35-12-3w, was preparing to bail. The total depth of the well is 6,364 feet and the 9-inch casing is landed at 6,235 feet.

Oklahoma City's Total Production

The Oklahoma City Field accumulative recovery has passed the 100,000,000-bbl. figure. The total recovery is placed at approximately 101,000,000 bbls. as of May 21. The field was discovered December 4, 1928. There has been 905 producing wells completed in the Oklahoma City Field since it was discovered, to May 20, and 14 dry holes completed defining the east and south sides of the field. The north and northwest sides of the field have been cut off by city ordinances prohibiting further development in that direction. It is believed that some of the most productive part of the Oklahoma City Field lies under the city. Wells completed on the edge of the city are considered as large as any yet found in the entire field.

The proven territory of the field covers approximately 18 sections of land.

The pipe line shipments from the Oklahoma City Field for the first 15 days of May totaled 1,612,672 bbls. which is a

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	S.D. 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	S.D. 5,502 ft.

BECKHAM COUNTY

Pattel Royalty's No. 1 Goose Tree, SW SE SW SE Sec. 32-10-23w	Rig.
Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w	T.D. 2,344 ft.; plugged back to 1,890-1,900 ft.; 1,500,000 ft. gas.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cmt. to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-22-22w	S.D. 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 24-10-24w	S.D. 3,575 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	S.D. 5,115 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w	S.D. 1,115 ft.

CHEROKEE COUNTY

La Piere et al's No. 1 Woods, C SE SE Sec. 27-17-21	S.D. 1,504 ft.

COAL COUNTY

Radial Oil Co.'s No. 1 McGraw, NE NW Sec. 2-1s-8	S.D. 1,450 ft.

COMANCHE COUNTY

T. E. Bradley et al's No. 1 Pruitt, NE SW SE Sec. 8-1-9w	Drlg. 900 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	S.D. 1,450 ft.

CREEK COUNTY

E. L. Jillson et al's No. 1 Starr, SE NW, Sec. 18-15-8	Rig.

CUSTER COUNTY

Miley Pet. Co.'s No. 1 Caldwell, NE Sec. 12-14-14w	Location.

GRADY COUNTY

English Drlg. Co.'s No. 1 Heenan-Coe, NE SE NE, Sec. 32-3-7w	Rig.
Carter Oil Co.'s No. 1 Carson, C SE SE SE, Sec. 12-3-8w	Drlg. 2,200 ft.
Schoonmaker et al's No. 1 Station, NW cor. 35-4-6w	S.D. 40 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	S.D. 5,850 ft.

(Continued on Next Page)

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daily average of 107,511 bbls. The crude oil stocks in the field increased 611,269 bbls. during the first 15 days of the month. It is estimated that only 250,000 bbls. of this is needed for tank bottoms.

The total amount of allowable oil to be shipped from the field during the month of May is 4,069,654 bbls. Of this amount 1,620,680 bbls. was shipped out during the first 15 days. The underproduction and overage situation in the field is believed to be in a healthy condition. Sixteen companies have overproduced 55,226 bbls. and 54 companies were underproduced 411,364 bbls.

Bryan County

Hughes and others' No. 1 Ayers, NE cor. SW, Section 30-7s-7, is a machine.

Beckham County

Alleman-Ramsey's No. 1 Marcum, C SW SW, Section 22-9-23w, is a rig.

Carter County

Russell's No. 1 Ratliff, NW cor. NE NW SW, Section 19-1s-2w, is a rig. Robb and others' No. 1 Burton, NE SW NE, Section 31-1s-2w, is a rig.

Creek County

Bryan Petroleum Co.'s No. 1 A. Postoak, SW cor. SE, Section 15-19-9, is a machine. Same operator's No. 1 B. McLain, NE cor. NW, Section 22-19-9, is a location. Same operator's No. 2 Scott, SE cor. SW, Section 15-19-9, made 145 bbls. of oil after a 5-quart shot from sand at 2,757-59 feet. Elliott Brothers' No. 1 Beardsley, CNL S half NE SE, Section 18-19-9, swabbed 20 bbls. of oil from 2,169-2,216 feet. Vensel and others' No. 1 A. Evans, NE cor. SW, Section 28-19-9, was dry in the Bartlesville sand at 2,229-2,311 feet. Willrough and others' No. 1 Stewart, SW cor. NW NE, Section 32-17-12, was dry and plugged at a total depth of 2,416 feet in Wilcox sand. J. H. Winemiller and others' No. 1 O. U.R., NW NE SW, Section 32-17-12, found water at 2,409-25 feet, and was plugged.

Hughes County

Taylor and others' No. 1 Emery, NE cor. SW, Section 28-7-8, is a rig.

Lincoln County

Gypsy Oil Co.'s No. 1 Rich, SE cor. NW, Section 1-15-6, an old well deepened; total depth 3,660 feet, rigging up.

Osage County

Lewis Production Co.'s No. 1, in the NE cor. SE, Section 28-24-7, is a location. R. S. Duffield's No. 1, in the SE cor. SW, Section 28-22-12, is a location.

Marshall County

Green and others' No. 1 McDuffee, SW cor. SE SW NE, Section 3-7s-6, is a rig. Collins and others' No. 1 Lewis, SE cor. NE SE NE, Section 4-7s-6, is a location. Ruble and others' No. 1 Howard, NW cor. NE NE, Section 10-7s-6, is a location. Kingston Oil Co.'s No. 1 Adams, NE cor. SW SW SE, Section 31-7s-6, was spudding.

McCurtain County

Ranchman and others' No. 1 Patterson, C SE NW, Section 7-6s-24, was abandoned at a total depth of 1,411 feet.

Muskogee County

Nuemeyer and Wallace's No. 1 A. Dan (twin), SW cor. NW NW, Section 14-13-15, was spudding. Robinson Oil Co.'s

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Preceding Page)

GREER COUNTY

Dovell et al's No. 1 Capell, NW cor. Sec. 1-7-22w.....5,000,000 ft. gas 1,455-65 ft.; T.D. 1,760 ft.
French's No. 1 Murphy, SW NW Sec. 23-7-21w.....S.D. 1,645 ft.

HASKELL COUNTY

Ault et al's No. 1 Hall, NW SW SW Sec. 14-9-19 .....S.D. 2,000 ft.
Ault et al's No. 1 Hall, SE NW Sec. 25-19-9 .....S.D. 200 ft.

KAY COUNTY

Bluebaugh et al's No. 1 Indian, C NW NE Sec. 30-25-1...Fishing 2,028 ft.
Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1 .....Location.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-3 .....S.D. 3,693 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w .....Rig on ground.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 8-7-18w.....Drlg. 1,200 ft.

LATIMER COUNTY

P. English's No. 1 Unknown, NW SE Sec. 16-6-19 .....S.D. 1,542 ft.

LINCOLN COUNTY

Sovereign Oil's No. 1 Selakek, NE SE Sec. 2-12-5 .....Drlg. 4,483 ft.
Hilton Phillips' No. 1 Phillips, SW NW Sec. 2-14-3 .....Show oil and water; 6-in. csg.; T.D. 5,065 ft.; swabbing.
Mote et al's No. 1 School Land, NW cor. Sec. 36-17-5 ...S.D. 3,570 ft.

NOBLE COUNTY

Wentz Oil's No. 1 Wolff, C SE NW Sec. 17-20-2w.....Rig.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor. Sec. 21-11-3w .....S.D. 1,200 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w .....S.D. 5,515 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5 .....S.D. 1,950 ft.

PITTSBURG COUNTY

Ruby Ann Oil Co.'s No. 1 George, CEL NW SE Sec. 3-4-16 .....Show gas 1,116-37 ft.; drlg. 1,160 ft.
Tape Oil Co.'s No. 1 Fulton, SE Sec. 34-7-14 .....S.D. 1,700 ft.
J. Morrison's No. 1 Fowler, NE SE Sec. 13-7-17 .....Rig.
C. Kennedy's No. 1 Travis, C SW NE Sec. 15-7-14 .....Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 .....Rig.

PONTOTOC COUNTY

Vanderslice's No. 1 Meredith, NE SW, Sec. 17-2-4 .....Drlg. 230 ft.

POTTAWATOMIE COUNTY

Clara Oil & Gas Co.'s No. 1 Unknown, SW NW NE, Sec. 1-9-4 .....R.U.S.T. 4,453 ft.
Barnsdall et al's No. 1 Gray, NE SW Sec. 25-6-4 .....3,484-90 ft.; 135 bbls. hr.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW Sec. 23-12-34w..... S.D. 5,150 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w.....S.D. 3,420 ft.

WASHITA COUNTY

Miley Pet. Co.'s No. 1 Wolfe, NE SW Sec. 23-9-17w .....Rig.
Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w .....Show oil 2,459-67 ft.; S.D. 2,757 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 .....S. D. 1,525 ft.

OKLAHOMA PANHANDLE

TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-1E ..T.D. 4,720 ft.; to cement.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Morris et al's No. 1 Ray, NE NW NE Sec. 8-2S-12 .....S.D. 256 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 .....S.D. 1,967 ft.

CARTER COUNTY

Lundy's No. 1 Spraggins, C NE NW SW Sec. 8-1s-2w ....S.D. 3,340 ft.

JEFFERSON COUNTY

Smith's No. 1 McCarty, SE NW NE Sec. 18-4s-8w .....Location.

MARSHALL COUNTY

Curry et al's No. 1 Croft, NE NW SW SW Sec. 9-7s-6 ...Rig.
Trailkill et al's No. 1 Spence, NE NW Sec. 10-7s-6.....Spudding.
Liggett et al's No. 1 McDuffee, SE NE Sec. 3-7s-6 .....Show 10 bbls. oil 805-09 ft. to pump.
Everett et al's No. 1 Agres, SE NE Sec. 14-7s-6 .....Abnd. 1,170 ft.

McCURTAIN COUNTY

Prassell et al's No. 1 Wagoner, SE NE Sec. 5-8s-27 .....Show oil 560 ft.; drlg 620 ft.
Stampfe et al's No. 1 Harris, SW NW SW Sec. 14-9s-25.S.D. 2,731 ft.
Stewart's No. 1 Patterson, C SE SE Sec. 7-6s-24 .....S.D. 1,411 ft.

PUSHMATAHA COUNTY

Whitehead et al's No. 1 Messer, SE SW SW Sec. 35-3s-18 .....S.D. 1,950 ft.

STEPHENS COUNTY

Gillette Bros.' No. 1 Cooley, NW SE NW Sec. 17-2s-8w..Location.
George's No. 1 Ryan, NW SW NE Sec. 21-3-15 ..... S.D. 510 ft.

No. 4 Brown, NW cor. NE SW, Section 17-13-16, was a machine. Braman Oil Co.'s No. 2 Brown, C N half SE NE, Section 18-13-16, old well drilled deeper, made 1,500,000 feet of gas from sand at 1,951-2,002 feet.

Pittsburg County

Ruby Ann Oil Co.'s No. 1 McCarty, SW cor. NE, Section 6-6-14, is a machine. Moffett and Hall's No. 1 Jones, NE cor. NW NW, Section 14-8-14, is a rig.

Pottawatomie County

Denver Producing & Refining Co.'s No. 1 Nye, NW cor. SW, Section 30-6-5, is a location. Arrow Drilling Co.'s No. 1 Noble, NE cor. SE SE, Section 26-5-4, is a rig. Oil, Inc.'s No. 1 Horn, SW cor., Section 13-6-3, made 240 bbls. of oil from sand at 3,409-3,519 feet.

Pawnee County

Klintworth and others' No. 1 Klintworth, SE cor. NE SE, Section 29-20-8, is a rig. Joe Samples' No. 1 Martin, SE cor. SW SW, Section 7-20-9, is a machine.

Okfuskee County

Cromwell Oil & Gas Co.'s No. 1 A. Deere, CWL SW SE, Section 8-12-7, made 20 bbls. of oil and 1,000,000 feet of gas from 2,862-74 feet. Champlin Refining Co. and Atlantic Oil Producing Co.'s No. 3 McGilbra, NW cor. NE, Section 18-12-11, made 40 bbls. of oil and 100 bbls. of water from sand at 2,825-27 feet.

Oklahoma County

Harper & Turner's No. 1 Hayes, NE cor. SE NW, Section 22-11-3w, is a rig. Phillips Petroleum Co.'s No. 1 Hunter, C SW NW SE, Section 22-11-3w, is a cellar. Same company's No. 2 Russell, SE cor. NE NW, Section 22-11-3w, is a rig. Same company's No. 3 Russell, NE cor. SE NW, Section 22-11-3w, is a rig. Slick and others' No. 6 Terminal, NE cor. SW, Section 3-11-3w, flowed 14,098 bbls. in 3 hours and 55 minutes with 160,000,000 feet of gas. Phillips Petroleum Co.'s No. 1 Rousch, SW cor. SE NE, Section 10-11-3w, made 295 bbls. of oil in three hours and 85,000,000 feet of gas from sand at 6,312-50 feet. Indian Territory Illuminating Oil Co. and others' No. 5 Lawrence Place, SW cor. SE NW, Section 15-11-3w, flowed 4,560 bbls. of oil in eight hours and 30,000,000 feet of gas, from sand at 6,370-6,451 feet. Phillips Petroleum Co.'s No. 2 Eversett, C SE NE SW, Section 15-11-3w, made 1,359 bbls. of oil in five hours from sand at 6,444-6,519 feet. McArthur Oil Co.'s No. 1 Bell, C NE NW SE, Section 22-11-3w, flowed 5,822 bbls. of oil in four hours and 70,000,000 feet of gas from sand at 6,455-6,549 feet.

Okmulgee County

J. W. King's No. 6 Doyle (twin), CSL NW NW, Section 20-13-14, was rigging up at a total depth of 2,071 feet. Jaunetta Oil Co.'s No. 11 Fat, NW cor. NE SE, Section 34-13-14, was completed for 10,000,000 feet of gas at 661-735 feet. Denton & Marshall's No. 1 A. Colbert, SE cor. SW NW, Section 14-14-14, was abandoned after a 30-quart shot at 1,787 feet. J. E. Wallace's No. 5 Colbert (twin), CSL NW NW, Section 14-14-14, was dry and plugged in sand at 1,079-1,102 feet. Castleman and others' No. 5 Thomas, CSL SW SE, Section 23-14-14, was abandoned at 1,000 feet. Vierson and Watters' No. 1 Thomas, SE cor. NW SE, Section 2-13-12, was plugged back from 3,055 feet to 2,737-40 feet where it made 1,000,000 feet of gas. F. C. Cusack's No. 4 Scott, NW cor. SW SE, Section 15-13-14, an old well drilled deeper, made 15 bbls. of oil and 10 bbls. of water after a shot from sand at 2,435-66 feet.

Seminole County

Ute Oil Co.'s No. 1 Combs, SW cor. NW SE, Section 18-10-7, was spudding.

Stephens County

Pace's No. 11 Watkins, SE cor. NE SE, Section 21-2s-7w, is a rig. Same operator's No. 3 Dilly, NW cor. SW NW SW, Section 22-2s-7w, is a rig. Egger & Pierce's No. 1 Bartley, NE cor. SE NE, Section 20-1s-8w, is a rig. Pace's No. 10 Houston, SE cor. NE SW, Section 2-2s-8w, made 16 bbls. from sand at 1,536-60 feet.

Tulsa County

S. W. Anthony's No. 7 Whetstone, NE cor. NW, Section 3-16-12, was abandoned at 955-85 feet. Same operator's No. 3 Whetstone, SW cor. NE, Section 3-16-12, was a rig abandoned.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 56)

FINNEY COUNTY

National Ref. Co.'s No. 1 Wells, C SW, Sec. 13-23-30w...Drlg. 4,800 ft.

HARVEY COUNTY

D. R. Louck's No. 1 Regier, SW SE NW, Sec. 9-23-3w...Drlg. 1,885 ft.
J. Liggett et al's No. 1 Vessel, NE SW, Sec. 3-23-3w....Location.
Liggett et al's No. 1 Davis, SW SE NE, Sec. 7-24-1.....S.D. 2,500 ft.

KINGMAN COUNTY

Panhandle Drlg. Co.'s No. 1 Wetheral, C SE NW SW, Sec. 20-28-10w .....12-in. csg. 1,610 ft.; S.D.

McPHERSON COUNTY

Detrick's No. 1 Dalke, NW SE Sec. 16-19-1 .....R.O.G.
Sidwell et al's No. 1 Nichols, NE NW NW Sec. 23-17-1w. Location.
Simmons-Canary's No. 1 Krehbiel, SE NW Sec. 33-18-1w. Rig.
Detrich et al's No. 1 Sinclair, SE SW, Sec. 25-19-1w....Drlg. 2,475 ft.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE, Sec. 22, 34-43w .....T.D. 3,640 ft.; temp. abd.

MORRIS COUNTY

Urschel et al's No. 1 Bersuch, NW SE NW, Sec. 10-17-7..S.D. 915 ft.
Kostle-Moseley & Hatfield's No. 1 Furney, NE SE, Sec. 16-16-8 .....Spud; S.D.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w .....Rig.

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW, Sec. 21-14-15.....S.O. 2,190-2,200 ft.; S.D.

PHILLIPS COUNTY

Hall et al's No. 1 Donaldson, C NE NE, Sec. 25-5-18w...Drlg. 2,410 ft.

PRATT COUNTY

Ninnescah O. & G. Co.'s No. 1 Hardesty, SW SE SE, Sec. 28-27-11w .....Rig.

RAWLINS COUNTY

J. G. Durham et al's No. 1 Weaver, SE cor., Sec. 3-2-35w..S.D. 3,925 ft.

RENO COUNTY

Martin et al's No. 1 Yadu, C NW NW, Sec. 15-24-5w....S.D. 318 ft.
Jarvis & Wright's No. 1 Rainbow, NW SE, Sec. 33-22-7w .Drlg. 3,700 ft.

RICE COUNTY

Slick et al's No. 1 Arth, SE NE Sec. 27-18-10w.....Rig.
J. Liggett et al's No. 1 Thodel, C NW NW, Sec. 11-21-7w.S.D. 50 ft.

RUSSELL COUNTY

J. Brennan's No. 1 Waly, CNL E½ NW, Sec. 29-13-11w..Rig.

RUSH COUNTY

Skelton et al's No. 1 Brock-Hartman, SW SE NE, Sec. 4-18-16w .....S.D. 50 ft.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Wels, C W½ NE NW, Sec. 20-13-4w .....T.D. 3,100 ft.; U.R. 6-in. csg. from 3,021 ft.

SEDGWICK COUNTY

Milly et al's No. 1 Jones, SW cor. Sec. 26-27-1 .....Drlg. 400 ft.
Scroggins et al's No. 1 Bartlett, NW SE NW Sec. 35-27-1 .....Rig.
Tulsa Oil Co.'s No. 1 Levert, C SE SW, Sec. 8-28-2w....Drlg. 1,757 ft.

SHERIDAN COUNTY

Flo et al's No. 1 Shoemaker, SE SW, Sec. 27-7-26w.....Fishing 4,505 ft.

STEVENS COUNTY

Argus Prod.'s No. 2 Christopher, C NE, Sec. 19-33-39w..S.D. 5,521 ft.

SUMNER COUNTY

Trees Oil Co.'s No. 1 Tompkins, SW, Sec. 26-32-1.....Location.
Trees Oil Co. and Shell's No. 1 Springate, NE SE SW, Sec. 6-34-2 .....Drlg. 3,205 ft.

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5-26-32

Montgomery County Well Is Important

Drill Stem Test Indicates 1,000 to 2,000-Bbl. Well, Gravity Estimated Between 37 and 44. New Leasing Play Starts in Conroe District

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., May 23.—That an oil field of important extent exists in the Conroe district of Montgomery County was fairly well proved in a drill stem test which was made late Saturday night in Strake Oil Corp.'s No 2 South Texas Development. Filling the drill stem in a 15-minute return, the test gave evidence of a 1,000 to 2,000-bbl. well although some estimates have placed the possible production at a much higher figure, and in this the belief of many that the area is destined to be a producer only of gas and of somewhat questionable extent has been removed

The test was made of a sand at a total depth of 5,030 feet. Seat was made at 4,978 feet, the remaining 52 feet to the bottom being rathole. Approximately 20 feet of pay sand was taken in and with a three-eighths-inch choke on the bottom and a one-quarter-inch choke at the top of the hole the fluid completely filled all fourbles and slopped over the top. Pressure was recorded as 200 pounds. While no accurate gravity test of the oil is available at this time it is estimated as being between 37 and 44 degrees, the crude being similar to that produced from the deeper sands of Humble, some 20 miles to the south.

New Leasing Play

As this is written casing is being moved in and it will be four or five days before this can be set and cemented and a screen setting made. Until that time the outcome of the well can be only a matter of conjecture but in the meantime the results of the drill stem test have launched a renewed leasing play throughout that area. Leasing for the past month and a half since the completion of Heep Oil Corp.'s No. 1 Cartwright, John Davis Survey, as a gas well has been inactive. Previous to the bringing in of the well, which was expected to make an oil producer, the area experienced a brisk leasing play. That well is 1½ miles to the east and north of the present well which in turn is 2,200 feet south, slightly east of the discovery well, Strake Oil Corp.'s No. 1 South Texas Development Co., these being in the Theodore Slade Survey, southeast of the town of Conroe.

The discovery well was completed last December making an estimated 14,000,000 feet of wet gas from a sand at a total depth of 4,991 feet. Later it started making a light gravity distillate (56 gravity) with production good for more than 100 bbls. daily. This now is being run to a small topping plant which has been constructed since the well was brought in. Pressure of that well originally was around 1,500 pounds but since then has been built up to better than 1,700 pounds despite the production. The Heep well on the Cartwright tract, 1½ miles distant, was completed in the same general horizon at a total depth of 5,078 feet. While very similar to the discovery well it is somewhat smaller.

Geology Limited

These wells represent the only production in Montgomery County, which is one of a group of counties located in an entirely virgin and little-drilled territory between the coastal salt dome district and the East Texas Field. Comparatively little geology has been worked out on the area and most of the subsurface knowledge of the Conroe district is limited to what has been learned by the above mentioned wells and from scattered deep tests located some distance from the present production. Thus, the type of structural condition and trend and nature of the field still are very questionable.

The present productive horizon of Conroe has been determined as being at the base of the Dibollensis, the lower Jackson, or else in the upper Yequa, the same as at Pettus in Southwest Texas. Both districts are along the "Jackson" trend which has been traced for several hundred miles approximately paralleling the present coastline, and on which trend several fields have been developed. Development at Conroe to date has indicated a decided lensing of sands, the present Strake well having encountered a number of sands not found in the first well so far as can be correlated. This well has been drilled with extreme thoroughness with every break being cored carefully and every sand being tested. It has encountered decidedly thicker sand bodies than in the other wells, which had largely shales.

The Conroe district is being attributed most commonly to a phase of shoreline deposition which possibly has undergone subsequent uplifting and faulting. However, it is not impossible that it overlies a salt dome.

Development on the South Texas Development Co. block, comprising better than 4,300 acres, is being done jointly by Strake Oil Corp. and Humble Oil & Refining Co. The block originally was acquired by G. W. Strake and a few associates who drilled the discovery well and later made a deal with Humble Oil & Refining Co., providing for the drilling of a series of tests and subsequent acquisition by that company if development is favorable. The original owners in the transaction retained approximately 4,000 acres unaffected by the Humble deal and which was a part of a block of more than 8,000 acres held prior to the drilling of the discovery well. The acreage retained by Strake and his associates lies to the south and west of the South Texas Development Co. block in the Humble deal.

Other Tests

In the Conroe district, but more than 6 miles to the west of the Strake development, Wilson Oil Co.'s (Kelley-Baker) No. 2 Leiberman, D. James Survey, was abandoned during the week, it being dry in sand at a total depth of 5,411 feet. The latter test originally was started early in 1930 and has been drilling off and on since then. It was abandoned in July, 1931, at a depth of 4,890 feet, but following the Strake discovery last December the owners went back into the hole, deepening it to its present level.

Two other tests now are actively drilling in the Conroe district, these being Heep Oil Corp.'s No. 1 Freeman, John Davis Survey, located east of this company's Cartwright gas well, and the same company's No. 1 Roberts, William Harrison Survey, north of the well. Another, Smith & McDaniel's No. 1 Sealey, Jonathan Pitts Survey, still farther north by several miles, is rigged up and should be drilling by this time. A number of other drilling obligations call for further activity which will have to be started in the near future, including one test which must be drilled on the George Hamman tract, Charles B. Stewart Survey, by Heep Oil Corp. In view of the second Strake well, the Hamman test will be of more than ordinary significance, as it is located only a little less than a mile to the south of the Strake well and away from the first gas well.

Barbers Hill

In the salt dome district there were few developments of particular importance. At Barbers Hill, Chambers County, Gulf Production Co. added another good Miocene sand well under the salt on the east side in its No. 8 Wilburn, which flowed 984 bbls. of pipe line oil in the first 24 hours through choke. It is in the sand at a total depth of 4,362 feet with 26 feet of 5-inch screen in the hole. Of some significance at Barbers Hill is Texas Gulf Producing Co.'s No. 7-A Barber, located on the northwest flank, which drilled through approximately 2,850 feet of salt, topped at 2,920 feet. Bottom of the hole now is 5,773 feet, where a string of casing has been landed to case off the salt. The existence of an overhang already had been proved on the northwest flank but the discovery tests were located farther out from the dome. On the south side of the dome, Mill Bennett Production Co. has given up temporarily its attempt to drill through the salt and prove an overhang there. Its No. 1-B Gulf fee now is standing at a total depth of 6,831 feet in salt. The salt was topped at 1,706 feet, making a total of 5,125 feet of salt drilled, the greatest amount on record. However, one 12-foot shale break was encountered around 1,780 feet and at 6,617-39 feet salt containing 10.7 per cent granular anhydrite was cored. It has been found that this hole has been deflected decidedly in toward the dome and operators have in mind going back into it later to straighten it and possibly drill through the salt into sedimentary formations.

At Markham

At Markham, Powers Production Co. and Hamill & Hamill's No. 2 N. R. Meyers, northeast side of the dome, has been completed in sand at 3,262-72 feet flowing 465 bbls. daily, 150 pounds pressure, three-eighths-inch choke. This is the third good well which has been completed in that immediate area, which was opened for production last July by Ellis Hamill's No. 1 Meyers, a well which has established an unusually consistent production record. The new well extends production 240 feet easterly, being that distance east of No. 1 Meyers, drilled by the same operators. A fourth test there, United North & South Development Co.'s No. 1 McDonald, swabbed a little oil but now is standing. A fifth test now is under way in Ellis Hamill's No. 2 Meyers, 225 feet northeast of No. 1 and 210 feet south and a little west from the new producer. Additional development on the southeast side of the dome is assured with a location by Smith and associates for their third test on the Hudson tract. The first two were abandoned in heaving shale although the second made a producer for a time in a sand higher up.

Southeastern Victoria

Bunte and associates' No 2 Keeran Ranch, Martin DeLeon Survey, southeastern Victoria County, has picked up sand showing oil at 5,191-93 feet and at latest report was to have made a drill stem test. This well is 200 feet east of No. 1 Keeran Ranch, a rank wildcat which earlier in the year was completed in the sand at 5,182-91 feet making an estimated 40,000,000 feet of wet gas with a pressure of 2,000 pounds on a five-eighths-inch choke. These wells are on a 2,500-acre block farmed out to these operators by the Gulf Production Co. out of an original 5,000-acre block held by the latter company.

McFaddin District

T. B. Slick estate's No. 2 McFaddin, J. Varian Survey, 3½ miles to the north of the McFaddin district, southwestern Victoria County, so far has not tested the sand encountered by it at 4,485-94 feet. Nine-inch casing was run in the hole. A drill stem test showed dry gas with pressure of 650 pounds although cores showed oil. The nearest well is the same operator's No. 1 McFaddin, 3,500 feet southeast, a wildcat gas well in a sand at 3,500 feet.

Harris County

W. R. Alexander and associates' No. 1 Herman Hale, wildcat in the R. A. Hanks Survey, northeast of the Humble Field, Harris County, has been abandoned as dry. It was drilled to a total depth of 5,086 feet and then sidetracked at 3,000 feet to a sand which was passed up around 3,300 feet This is the first test drilled by these operators on a geophysical prospect.

Manvel

The Texas Company has made location for its fourth test at Manvel, Brazoria County, where two deep producers already have been completed. The new location, No. 3 Belcher is 1,220 feet southwesterly and 200 feet southeasterly out of the north corner of the Belcher lease, Harvey N. Little Survey. This places it approximately 450 feet to the northwest of No. 1 Belcher, the discovery well, which now is producing from sand at a total depth of 5,494 feet. No. 2 Belcher, the second producer, but which now is being deepened, is located approximately 1,600 feet southeast of the discovery well. No. 2, which, originally completed at 5,602 feet and again at 5,685 feet, never has made a satisfactory well and a location the opposite direction will be of interest. No. 3 Belcher, also is in the direction of No. 1 Ewing, the first test drilled in the area and which was abandoned at a total depth of 7,648 feet. It has encountered several sands and had made a short lived gas well at 7,590 feet.

GULF COAST FIELDS AND WILDCATS

Week Ending May 21

RACCOON BEND—AUSTIN COUNTY

Company, farm and location—	Remarks:
Humble O. & R. Co.'s No. 2 McCasland, Wm. C. White Sur., 600 ft. southeasterly along SW line from NW cor. thence 200 ft. northeasterly at right angles	Rig.

BARBERS HILL—CHAMBERS COUNTY

R. E. Ferrell's No. 2 Wilburn, Henry Griffith League, 315 ft. W of No. 1 in center of 45-acre tract	Drlg. lime 2,527 ft.
Gulf Prod. Co.'s No. 8 Wilburn, Henry Griffith League, W of No. 7	Set 26 ft. of 5-in. screen 4,362 ft.; comp. flowing 985 bbls. pipe line oil, 280 lbs. pressure, ⅝ and ¼-in. chokes.
Humble Oil & Ref. Co.'s No. 1 Kirby, Henry Griffith League, 520 ft. N along E line from SE cor. of tract, thence 75 ft. W at right angles, thence 75 ft. N at right angles	Location.
McAlbert Oil Co.'s No. 2-B Higgins, Wm. Hodges Sur., 265 ft. from N line and 50 ft. from W line of tract	Coring sand 4,716 ft.
Mills Bennett Prod. Co.'s No. 1-B Gulf fee, Wm. Bloodgood Sur., 500 ft. E and 50 ft. N of SW cor. of "B" lease	Salt 1,706-6,831 ft.; temp. S. D.
Mills Bennett Prod. Co.'s No. 4-A R. W. Barber, Henry Griffith League, 300 ft. W of No. 3-A, 50 ft. N of S line	Drlg. rock 1,044 ft.

(Continued on Page 72)

Three New Locations in New Mexico

Weld County, Colorado, Test Appears to Be Running Higher. Osage Pool Has 200-Bbl. Well. Ohio Oil Co. Gets 800-Bbl. Well on Dry Creek

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., May 23.—Three new locations and one completion were reported in New Mexico. The Midwest Refining Co. made one new location and completed a 1,000-bbl. well in the Hobbs Pool. The Texas Company staked a location in the Lea Pool and Southern Union Gas Co. is starting a deep test on the Kutz Canon structure in San Juan County.

Geologists reached an agreement on their Colorado trip as to the identification of certain upper Cretaceous beds about which there had been a dispute. The Tulsa-Fort Morgan Petroleum Co.'s wildcat in Weld County appears to be running several hundred feet higher than Greasewood.

A 200-bbl. well was completed in the new west extension of the Osage Pool in Wyoming by the Chadron-Osage Oil Co. One new location was reported and several wells which have been idle are resuming.

In Montana, the Ohio Oil Co. completed an 800-bbl. well in the Lakota on the Dry Creek Dome.

NEW MEXICO

Lea County

One new location was staked in the Hobbs Pool this week in the Midwest Refining Co.'s No. 11 Byers, C NE NE Section 4-19-38, in the southeastern part of the field. It is an inside well, a west offset to the company's No. 8 Byers, C NW NW Section 3, which was completed last March for 2,207 bbls. daily through the tubing.

Amerada Petroleum Corp.'s No. 1 Hardin, SW cor. Section 18-18-38, in the northern end of the field, has cleaned up its fishing job and is drilling at 3,261 feet in anhydrite. It had a show of oil at 3,230-35 feet.

Texas Pacific Coal & Oil Co.'s No. 3-G State, C SE Section 24-18-37, is drilling at 2,000 feet in salt. The 12½-inch was cemented at 215 feet with 200 sacks. Top of the anhydrite was at 1,477 feet and top of the salt at 1,603 feet.

Midwest Refining Co.'s No. 8 Terry, C NW SW Section 10-19-38, an inside location in the southeastern part of the pool, was completed with an estimated production of 1,000 bbls. per day and is waiting for proration test.

The Texas Company's No. 3-A State, C Lot 2, Section 2-21-33, in the Lea area, is a new location and will mark the first drilling in the Lea Pool for more than a year. The footage is 660 feet from the north line and 1,980 feet from the east line of the section. This puts it a half a mile northwest of the group of producers in Section 2 and about the same distance southeast of No. 1 Lynch, the discovery well. No wells have been drilled between the Lynch producers and the wells to the southeast.

Chaves County

Warman Oil Trust's No. 1 Evans, N half, Section 15-14s-25, Blackdom district, is bottomed at 1,213 feet in dark lime and preparations are being made to shoot the showings at 1,142-50 and 1,156-62 feet with 30 quarts. The oil is a heavy grade of about 20 gravity. It is reported coming into the hole slowly.

De Baca County

Landowners Oil Co.'s No. 1 McAdoo, SW cor. NE Section 16-1s-27, Buffalo Creek, is drilling at 4,758 feet in lime and carrying 6⅝-inch at 4,732 feet, and Matador Oil Co.'s No. 1 Woods, NE SW SW Section 6-4n-20, Salada Creek, is shut down for orders at 4,662 feet.

Eddy County

Avalon Oil Co.'s No. 1 State, NE cor. SE Section 26-20-27, southwest of the Getty Pool, is drilling at 990 feet in white lime and will stop when contract depth of 1,000 feet is reached. It had 600 feet of sulphur water at 755 feet and an increase at 925-30 feet.

W. A. Scott's No. 1 Keiser, NW SE Section 7-18-27, Artesia district, is drilling at 350 feet in lime.

Leonard & Levers' No. 7 State-Levers, C SW SE Section 20-17-29, Jackson area, is drilling at 450 feet in salt. The 10-inch was cemented at 335 feet. Top of the anhydrite was at 352 feet and top of the salt at 430 feet.

Grayburg Oil Co.'s No. 3 Burch, C SW NW Section 19-17-30, Jackson area, which made 520 bbls. the first 24 hours from a total depth of 3,101 feet, averaged 260 bbls. per day the past week. It probably will be drilled a few feet deeper and completed within a fw days. This is the best well drilled in Eddy County for several years.

San Juan County

The Southern Union Gas Co. will drill a deep test on the Kutz Canon structure in its No. 6 Angel Peak, on the Garland permit, in the NW cor. Lot 2, Section 11-28-11. The location is half a mile south and three-quarters of a mile east of the Congress-National well, the discovery on this structure. The several gas wells on this structure are producing from the Picture Cliff formation at around 2,000 feet. The deep test will go at least to the Point Lookout sand in the Mesa Verde formation at 3,500 feet and possibly to the Dakota. Cable tools will be used at first and later rotary will be substituted.

Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor. Section 20-28-10, 2 miles south of the deep test location, reached the caprock over the Point Lookout sand at 3,800 feet and is building stub derrick to run 5⅓-inch, which is on location, before drilling in. This is the deepest test so far drilled on the structure. A considerable increase in gas took place at 3,800 feet, but whether this is new gas is not definitely known. The well had about 2,000,000 feet per day from the Picture Cliff and first sand in the Mesa Verde and a hole full of water has been carried

(Continued on Next Page)

Five Completions in Eastern Fields

Increase of Operations in Southeast Washington County, Ohio. Three Gas Wells Completed in West Virginia Districts

By Staff Correspondent

PITTSBURGH, Pa., May 23.—The eastern fields presented only five completions and one dry hole during the week. Two were small producers, and three were gas wells, one of which was quite fair. The refinery demand for Pennsylvania Grade crude continues steady with practically all of the 90 per cent allowable accounted for in runs to stills. As yet there has been no appreciable increase in operations except in southeastern Washington County, Ohio.

SOUTHEAST OHIO

Again, there were no completions in southeastern Washington County, Ohio, and what had been expected as a deep sand pool after the performance of the Crago well, the Harris test in the southwest quarter of Section 11, Grandview Township, now appears as a problem. The offset well to this test, the test of E. J. Mildren and others on the William Barber farm in the same section as the Crago and little more than 200 feet distant, presents the appearance of a dry hole in the same presumable formation.

In the Crago test, the first heavy head was struck at 2,915 feet. The Mildren test on the Barber farm is shut down at 3,200 feet, and allowing for the difference of elevation in the derrick floor, is past the third Warren sand. The sand in the formation is slaty with hard sand, which may account for a crevice flow.

The Buckley and McCall test on the Porter Pryor farm in northeast quarter of Section 16, Independence Township, fished the tools lost at 2,800 feet and continued drilling during the past week. The hole stands 3,200 feet deep, past the third Warren, which made no showing and the test was shut down. It is credited with being a dry hole.

In the NE Section 10, the Penn Ohio Gas Co., the Benedum-Trees interest in this section, drilled its test on the D. R. McKnight farm from 2,700 feet to 3,270 feet during the week. The third Warren formation was passed through and it is reported it is also void of production. It is reported that both the Mildren test on the Barber farm and this one on the McKnight will be drilled deeper.

Back of Newport, SE Section 34, Newport Township, Swingle Brothers shot their test on the Michael Edwards farm in the Fifth sand and it did not help. This test is being abandoned and the casing is being pulled out. It is reported these operators will move to a new location about a mile northwest and start a second deep test.

News of other wells drilling in this section include E. E. Grim and others associated with the Penn-Ohio Gas Co. drilling on the E. E. Knowlton farm, NW Section 10, Independence Township, and shut down for casing at 2,585 feet. The Penn Ohio Gas Co. test on the John Semmler farm, SE Section 16, has reached 1,700 feet and drilling.

In SE Section 14, Independence Township, the Reno Oil Co. has spudded in on the James H. Goodman farm and is drilling at about 100 feet. This test is reported scheduled for the Niagara lime if it fails to complete at a shallower depth. The Grimm interests have also shipped two steel rigs for tests to be made on Irish Run. Recapitulating this field, the total stands one producer and five dry holes.

Completions

In Southeast Ohio, two producers were completed, one other well made a small showing, but will be used as a pressure well, and one dry hole was reported.

In Medina County, E. R. Edson & Son Co. added to their string of producers with No. 21 on the W. A. Shaw farm, Section 10, Chatham Township. It was drilled to 308 feet in the Berea grit and made 5 bbls. the first day after shot. On Tract 6, Lot 22, Chatham Township, Curtis and Eaken drilled No. 6 on the Thomas Brown, Jr., farm to a depth of 400 feet and abandoned it as a dry hole.

In Vinton County, the Co-operative Oil Co. completed No. 4 on the Robert Nelson farm in Section 4 of Knox Township in the Berea grit. The well started off at about 2 bbls. a day. In Section 14, Palmer Township, Washington County, G. E. Morris and others drilled No. 15 on the Effie M. Burt farm in the Cow Run sand to 460 feet. After shot, the well made a quarter of a barrel, the first day, and will be converted into a pressure well, using air.

WEST VIRGINIA

But three wells were completed in West Virginia and all were gassers. The largest was a second test of W. H. Kirtley on the J. H. Cottle farm in Scott district, Putnam County. It was completed at a depth of 1,734 feet in the Injun sand and is quite a fair well gauging in excess of 2,000,000 feet a day.

In Boone County the Cambridge Gas Co. drilled a second well on the C. C. Lewis heirs farm in Scott district. It is a fair well at a depth of 2,494 feet. In Lincoln County, the Vernon Gas Co. completed a second test on the Roy and Hal Adkins farm at a depth of 2,415 feet. It will make a small gas well.

Drilling in West Virginia

In Roane County, the deep test of the United Fuel Gas Co. on the J. W. Hinzman farm in Curtis district still stands at 9,100 feet with the tools in the hole. The hole is filling up and the operators are going to test some of the formations. In the same district, W. B. Heeter is drilling his test on the T. C. Burdette farm at 2,200 feet. The Henderson Oil Co. is rigging up on the F. L. Ball farm in this district, and close by the Reedy Oil & Gas Co. is rigging up on the Clyde and E. S. Guthrie farm. In Spencer district, O. E. Garrett and others have reached a depth of 500 feet on the Roy Hildreth farm.

In Calhoun County, Harley Ferrall and others are drilling on the Mary Allen farm and have reached 1,800 feet. This is in Lee district. In the same district, the Crummies Creek Fuel Co. has made a location for a second test on the H. L. Harless farm. F. F. McIntosh remains shut down in his No. 4 on the John Riddle farm. This operator has the material on the ground for No. 3 on the Fox and Morgan lease, and holds a location on the Carr Shaffer farm, all in Lee district. In Washington district, Holly Jarvis and others are shut down after reaching 1,400 feet on Hoke Jarvis farm, and these operators have a location on the L. H. Crookshank farm. In Center district, W. H. Bickle has a rig standing for a second test on the George D. Starkey farm. In Sheridan district, the Conservation Oil & Gas Co. drilled a second test on the James Kerby farm to 2,140 feet, on top of the Injun sand and shut down with no report. In Sherman district, nothing further has been done with Creed Barber and others' test on the A. J. Huffman farm which was reported as an oil well in the Blue Monday sand at 2,249 feet.

In Lincoln County the Turtle Lick Gas Co. reached a depth of 2,275 feet, the Injun sand, on the J. F. Thompson farm in Jefferson district, and shot it at that depth. The hole is being cleaned

out preparatory to testing. In the same district the Cambridge Gas Co. has reached 1,760 feet in a second test on the A. M. Mullens farm. In Carroll County, the United Fuel Gas Co. is down 1,080 feet on the C. F. Vickers farm. Here the Kanawha Gas & Utilities Co. is holding a location on the W. W. Carroll farm, and in Sheridan district, this company has two locations, one for a second test on the Nona Johnson farm and the other on the Byron Johnson farm.

In Cabell County, C. C. Wolf is drilling on the J. F. Weatherington farm in Guyandotte district and has reached 1,450 feet. In the same district, the Midway City Gas Co. is drilling at 1,225 feet on the O. C. Morrow farm, and the Standard Ultra-Marine Co. has made a location on its own property. In Grant district, the United Fuel Gas Co. has reached 1,650 feet on the J. Frank Grass farm.

In Boone County C. P. Jones is building a rig for a second test on the G. T. Hill farm in Washington district, after a fair first test. In Sherman district, the Pure Oil Co. is nearing the Injun sand in its No. 57 on the Federal Coal Co. lease with a depth of 1,982 feet.

In Monongalia County, the Pennsylvania Counties Gas Co. has spudded in and started drilling on the J. L. Jamison farm in Grant district. In Battelle district, the West Penn Gas Corp. is still shut down at 2,580 feet on the Kimble Wood farm with the bit in the hole and fishing.

In Tyler County, the Ohio Oil & Gas Co. reached 2,116 feet on the A. D. Arnett farm in Meade district and shut down for test. In Union district, Howard Hall and others have made a location for No. 3 on the Martha Johnson farm. In Burning Springs district, Wirt County, the Hope Natural Gas Co. has started to drill its old No. 3,210 on the George Richards farm to deeper sands. In the same district, R. C. Waggoner and others have reached 1,070 feet in a second test on the Luther Kemp farm.

SOUTHWEST PENNSYLVANIA

As yet, there have been no additional completions in the Southwest Pennsylvania districts, waiting on such time as full production is allowable. There is a somewhat better appearance of activity with the new work listed below. In Amwell Township, Washington County, Willard Iams and others have reached a depth of 1,200 feet on the Willard Iams farm. In this township, the Union Gasoline & Oil Co. has completed a rig on the H. B. Lindley farm. J. C. Laustuller is drilling on the William Doak farm, same section, deeper and is at present around 3,200 feet. In South Franklin Township, the Carnegie Natural Gas Co. has a rig standing on the T. Dickerson farm, and the Martin Oil & Gas Co. one on the Hiram McClain farm. In Hanover Township, Beaver County, John Reed & Co. are down 940 feet on the Silas Patterson farm.

ROCKY MOUNTAIN AREA

(Continued from Preceding Page)

to partly hold back the pressure. No gauge was taken of the upper gas and without this datum, it cannot be definitely said whether the increase is coming from the deep sand. It will be two weeks or more before any new hole is made.

COLORADO

The trip taken last week through certain districts in Colorado by representatives of the U. S. Geological Survey, geologists for several oil companies and a number of consulting geologists, to make a study of outcrops of the upper Cretaceous to harmonize certain differences of opinion, resulted in an understanding being reached by all concerned. The study was devoted primarily to the identification of the Foxhills formation as it will appear on the new regional map under preparation by the survey. There was a difference of opinion as to the age of the beds at the contacts between the Laramie and the Foxhills and the Foxhills and the Pierre. The representatives of the survey, it is understood, agreed to accept the interpretation of the local company and consulting geologists and the Foxhills will be mapped as a lithological unit although it was agreed that certain sections of the beds were laid down at different periods. The U. S. Geological Survey was represented by Dr. John B. Reeside, Jr., Washington; Dr. T. S. Lovering, Golden; J. W. Vanderwilt, Golden, and George Law, Denver, W. C. Topelman, of the University of Colorado and W. A. Waldschmidt, of the School of Mines; Herman Davies, of the California Co.; E. W. Scudder, of the Gypsy Oil Co.; A. E. Brainard, C. S. Lavington and C. H. Rankin, of the Continental Oil Co.; W. B. Emery, of the Ohio Oil Co.; H. A. Aurand and E. S. Shaw, of the Midwest Refining Co.; Clayton Phoebus and V. C. Scott, of The Texas Company; and C. M. Boos, of the Empire Gas & Fuel Co., represented the various oil companies. Consulting geologists in the party were R. L. Heaton, C. T. Lupton, C. E. Shoenfelt, Carl Walter and V. J. Hendrickson, of Denver.

Weld-Fort Morgan Counties

The Tulsa-Fort Morgan Petroleum Co.'s No. 1 Anthes, C NE NE Section 24-8n-59, New Raymer district, northeast of the Greasewood Pool, encountered the first water sand at 880 feet. The total depth is 930 feet. The 15½-inch is at 765 feet. This water sand is identified as the same found in the upper Pierre at between 1,300 and 1,400 feet at Greasewood and indicates the well is running between 400 and 500 feet higher than the producers at Greasewood. It is not expected that any more water will be encountered above the Hygiene, the next important marker and a sand that holds possibilities for either oil or gas. Lines are being run to determine the exact elevation above sea level on the basis of the measurements at Greasewood

Ohio Oil Co.'s No. 1 Leona Butters, C SW SW Section 7-6n-60, Morgan County, in the Greasewood area, is moving in. Contract has been let to the Rocky Mountain Drilling Co. It will be drilled with rotary bit. This well is a little more than a mile northeast of No. 1 Briggs, the nearest producer, and will disclose the possibilities of the Greasewood Pool in that direction. No wells have been drilled north or east of No. 1 Briggs.

No. 1 Butters will call for an offset on the Niles tract in the E half Section 13-6n-61. This tract is held under lease by the Platte Valley Petroleum Co. and an announcement is expected shortly as to its plans to drill this offset and an offset to No. 1 Briggs. Menus Johnson, who has been with the Platte Valley company since before it came in in 1930 and who shortly thereafter was elected president, resigned that office the past week to return to Chicago. His return to Chicago was made necessary by the death of a business associate. He will remain on the board of directors. Galway Layton was elected to the presidency and Dean Covert was chosen secretary and treasurer to succeed Layton.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE Section 7-4s-66, near Aurora, made 65 feet of new hole the past week to 6,080 feet. Recent drilling has been in a broken formation consisting mostly of sandy shale and a little lime. It showed some oil and gas saturation.

Larimer County

Mayer Oil Co.'s No. 1 Reed, SW cor. NW Section 28-4n-69, Berthoud district, is bottomed at 3,800 feet and fishing for tools.

El Paso County

Colorado Springs Oil & Natural Gas Co.'s No. 2 Carson, NW NE NE Section 10-16s-66, Fountain district, is drilling below 1,900 feet and had a show of oil and gas in the Neo-Benton just above this depth. Its No. 1, which was lost, had 500,000 feet of gas in the Neo-Benton at 1,827-37 feet.

Rio Blanco County

The California Co.'s No. 1 California-Raven, NW SE Section 30-2n-102, Rangely Dome, is drilling at 5,144 feet.

WYOMING

Weston County

Another good completion in the new west extension of the Osage Field was reported this week in Chadron-Osage Oil Co.'s No. 16, CWL NW SW Section 14-46-64, which showed for 200 bbls. in a 24-hour test. The sand was found at 2,044-56 feet. It is an offset to a producer and proves up one location.

Lambie Oil Co.'s No. 8 Bock, SW cor. NW Section 14-46-64, just north of the Chadron-Osage well, has rig on location. Federal Oil Co.'s No. 2, CEL NE SE Section 15-46-64, a west offset to the new producer, is drilling below 1,800 feet and will be an early completion.

Julius Peters and others' No. 1 Witzell, SE cor. NW Section 30-46-64, Fiddler Creek, is cementing cave at 3,600 feet.

Crook County

Wy-Tex Oil & Gas Co.'s No. 1, Section 32-54-60, Oak Creek structure, has rig on location. This dome straddles the Wyoming-South Dakota line. Northwest Oil & Gas Co.'s No. 1 Wolff, NW cor. Section 6-54-60, which has been shut down at 1,685 feet, is reported preparing to resume.

Converse County

Ohio Oil Co.'s No. 1 Kinney, SE SW SE Section 4-33-76, Big Muddy Field, has material on location. Continental Oil Co.'s No. 30 Glenrock Sheep, SW SE SE Section 4-33-76, is building derrick and moving in material. Contract has been let to Olson Drilling Co. Both wells will be drilled with rotaries and have the Lakota as the objective.

Converse Oil & Gas Co.'s No. 1 Carlson, C SW SW Section 27-33-73, Alkali Creek, 13 miles west of Douglas, is resuming at 2,020 feet after being shut down since last fall. The company has 7,000 acres in the block. At 1,087 feet it had a show of oil and gas through water.

Natrona County

Mutual Oil Syndicate's No. 2, C SW SE Section 14-35-79, Midway Dome, is bottomed at 5,065 feet and trying to restore circulation. This is the third time circulation has been lost, indicating a faulted condition which was not apparent in the discovery well. It has less than 100 feet to go to reach the second Wall Creek. S. H. Keoughan, who is in charge of this operation, recently figured that a 100-bbl. well at this location will yield larger returns than a 20,000-bbl. well in East Texas. This is based on the fact that a ready market at favorable prices exists for all the oil the well can produce while East Texas wells are prorated to such an extent that a 20,000-bbl. well would hardly exceed it in actual output. The discovery did much better than 100 bbls. before it was deepened.

Jarvis & McDonald's No. 1 Government, SE cor. Section 31-30-81, Spindletop, is drilling at 720 feet. The Sundance at 1,050 feet is the objective.

Lakota Oil & Gas Co.'s No. 4, SW NW Section 31-37-81, North Casper Creek, is resuming at 710 feet after being idle for two years. It will be carried to the gas in the Mowry shale. It is planned to drill 10 holes around the flanks to work out the structure before making another deep test.

Carbon County

Prairie Oil & Gas Co.'s No. 1, SE SE SW Section 29-27-89, Bunker Hill, is coring in sharp sand at 6,355 feet.

Midwest Refining Co.'s No. 27 Union Pacific, NW SE SE Section 11-20-81, Elk Mountain, is changing over to rotary at 4,020 feet.

Big Horn County

Lovell Dome Association's No. 1 Sheets, SE SE Section 9-55-96, southeast of Byron, is moving in materials. Contract has been let to B. E. Parrish, of the Cody Petroleum Co.

MONTANA

Carbon County

The Ohio Oil Co. has completed a good producer in its No. 2 Montana Industrial, C NW SE Section 11-7s-21, on the Dry Creek Dome, in the Pryor conglomerate in the Lakota formation at a total depth of 5,488 feet. It made 722 bbls. in an 18-hour test and is rated as an 800-bbl. well. It is a much better well than No. 1 Montana Industrial, which it offsets, and which was completed in the Dakota.

Ohio Oil Co.'s No. 2 Robinson, C SE SE Section 3-7s-21, is drilling at 4,413 feet, below the first Frontier in which it had a show of gas. Same company's No. 1 Bowman, C SE NE Section 4-7s-21, has rig completed and its No. 1 Caldwell, CEL NE SE Section 12-7-21, is drilling at 4,018 feet.

Carbon Oil & Gas Co.'s No. 1 McMinn, NW SW SW Section 7-7s-22, is drilling at 4,400 feet below the first Frontier, in which it had considerable gas and oil, and is near the second Frontier. Same company's No. 1 Armstrong, SW cor. NW Section 7-7s-22, is trying to shut off bottom water in the Dakota at a total depth of 5,710 feet.

Ohio Oil Co.'s No. 1 Kuchinski, NW SE NE Section 15-7s-22, Golden Dome, to the east of Dry Creek, is drilling at 6,660 feet in the Morrison with the Sundance as the objective. So far it has shown nothing worth while.

Jack Creek Oil Co.'s No. 1-A, SW NE SE Section 15-7s-23, is ready to spud. No. 1 was lost at 1,330 feet.

Toole County

Askalta Oil Co.'s No. 3 Farbo, SE SW NE Section 2-37-4w, Buckley Border district, is rigging. Location was changed from the C SE NE of Section 2. It is an offset on the west to No. 2 Farbo, which made 200 bbls. initial.

Cascade County

Charles Merz and others' No. 1 Sheffield, SE NW Section 4-21-4e, Black Horse Lake, is drilling at 1,175 feet and had a show of oil at 1,140 feet in the Quadrant formation.

Glacier County

R. C. Tarrant's No. 1 Reichoff, SE SW NE Section 3-34-6w, Cut Bank district, is rigging up, but will not spud until after his No. 1 Hogland is completed. This formerly was carried as Browning Development Co. Tarrant's No. 1 Hogland, NW cor. SW Section 13-34-6w, is drilling below 2,780 feet.

Liberty County

Northland Oil & Gas Co.'s No. 1 Yurman, C SE SW Section 32-33-5e, Liberty district, cemented cave at 3,815 feet and shut down.

People's Oil & Gas Co.'s No. 1 First National Bank, C SE NW Section 17-36-6e, Bear's Den, completed sidetracking 8¼-inch and is drilling ahead at 2,000 feet.

Teton County

The California Co.'s No. 1 Sullivan, NW NE NW Section 34-27-7w, Bynum district, is bottomed at 2,840 feet and redrilling at 2,755 feet.

UTAH

American Oil Corp.'s No. 1, Section 18-26s-7e, Last Chance district, Emery County, is shut down at 280 feet to finance.

Powers, McMaster & Boyden's No. 1, SE SW SE Section 35-3n-5e, Chalk Creek district, Summitt County, is drilling in shale at 150 feet.

SOUTH DAKOTA

Chadron-Osage Oil Co.'s No. 1 Moody, NE cor. SW Section 6-12s-6e, Fall River County, is drilling below 1,800 feet.

WASHINGTON

Ohio Oil Co.'s No. 1-A Robinson, Section 5-17n-9w, Aberdeen district, Gray's Harbor County, is rigging up.

CRUDE OIL STOCKS LOWER

Pipe line and tank farm net domestic crude oil stocks east of the Rocky Mountains decreased 2,337,000 bbls. in April, according to returns compiled by the American Petroleum Institute from reports made to it by representative companies. The net change shown by the reporting companies accounts for the increases and decreases in general crude oil stocks, including crude oil in transit, but not producers' stocks at the wells.

CHILE MAY OPEN FIELDS

The Chilean Bureau of Mines is urging the government to open Chilean oil fields to exploration by foreign firms in view of the lack of funds to continue the work exclusively with Chilean capital, as at first suggested.

It is expected that United States, British and other interests would avail themselves of an opportunity to develop further wells begun in shale deposits and at other points where the existence of oil is proved.

California Proration Committee at Work

Elects H. Paul Grimm, Chairman, and Fred Owen, Vice Chairman. Efforts to Harmonize Independent Factions. Gas Suit Decision Deferred

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., May 21.—The seriousness of the situation confronting the California oil industry was brought home direct to a number of independent producers during the early part of last week when Union Oil Co. served notice it was immediately reducing its crude production and purchases 15 per cent. This drastic step, initiated to balance supply and demand, became imperative when the company's storage facilities became filled. The percentage of cut was applied to all production handled by the company, including its own, and no producers were completely shut off. This action definitely confirms recent statements of Ralph B. Lloyd, president of the California Oil Producers Sales Agency, that major companies could not continue buying crude oil indefinitely and that state production must be reduced to economic requirements to prevent further demoralization.

Those unfamiliar with the entire picture cite the fact that as total Pacific Coast stocks have increased only 1,540,834 bbls. since January 1, there is really no great overproduction in California at present. The fallacy of such a deduction becomes evident when one considers the various commodities in storage. Stocks of refining crude, which aggregated 42,434,600 bbls. on April 30, for instance, are 539,400 bbls. greater than the 41,895,200 bbls. to storage January 1. The real problem is found in gasoline stocks as the quantity in storage has increased 2,621,422 bbls. during the first four month of the year. Stocks of gosoline in Pacific Coast territory totaled 18,442,175 bbls. on April 30, and 15,820,753 bbls. on January 1. Naphtha distillates, which contain approximately 50 per cent gasoline by straight distillation and a correspondingly higher yield when cracked, have increased 385,889 bbls. since January 1. At the close of April there were 4,491,020 bbls. of naphtha distillate and crude gasoline in storage on the Pacific Coast. Stocks of unrefinable crude and refinery residuum were reduced 1,184,264 bbls. during the first four months of 1932. A substantial part of this reduction is due to an abnormal demand incident to maneuvers of the United States Navy on the West Coast. Too much stress should not be laid on the reduction effected in fuel oil stocks because, in the final analysis, gasoline is the dominating influence which must be contended with in the stabilization of production or maintenance of adequate prices. Under normal conditions, gasoline produces approximately 75 per cent of the total revenue of integrated units.

New Curtailment Pending

The newly organized Oil Producers Central Proration Committee went into executive session late this week to consider ways and means of reducing state production to economic requirements, and elected H. Paul Grimm chairman and Fred Owen vice chairman. The oil committee is comprised of 13 members, representing the various sections of the state. In addition to Chairman Grimm of the Pacific Western Oil Co., and Vice Chairman Owen, of the Berry Oil Co., who represent Ventura County and the Maricopa Field respectively, the committee of L. A. Cranson of the Honolulu Oil Co., representing Santa Barbara County; William Keck of the Superior Oil Co., representing Kettleman Hills; V. R. G. Wilbur of the Wilbur Oil Co., representing the Long Beach Field; Robert Hickerson of the Crudoil Co., representing the Huntington Beach and Seal Beach Fields; George Ring of the Ring Oil Co., representing the Santa Fe Springs Field; Lawrence Vander Leck of the Fullerton Oil Co., representing the Fullerton, Coyote, Montebello, Richfield and Whittier Fields; W. C. Whaley of the Barnsdall Oil Co., representing the Torrance, Dominguez, Rosecrans, Potrero, Inglewood, Lawndale and Los Angeles City Fields; W. S. Fisher of the Confidence Oil Co., Mercantile Crude & W.M.&M. Oil Co., representing the Coalinga Field; R. R. McGuire of the Honolulu Oil Co., representing the Midway Field; Lloyd Williamson of the California Star Oil Co., representing the Bakersfield district, and Lawrence Kelly of the Thomas Kelly & Sons Oil Co., representing the Playa Del Rey Field.

In addition to these 13 members, operators in the various fields elected one alternate member in the event the chairman of any district is unable to attend any of the various sessions. The alternate member from Santa Barbara County is C. S. Jones of the Rio Grande Oil Co.; the alternate from Ventura County, C. W. Lord of the Bolsa Chica Oil Co.; from Kettleman Hills, William Reinhardt of the Kettleman North Dome Association; from Long Beach, A. S. Johnston of the Dabney-Johnston Oil Co.; from Huntington Beach and Seal Beach, A. H. Bell of the Continental Oil Co.; from Santa Fe Springs, Emil Kluth of the George F. Getty Co., Inc.; from Fullerton, Coyote, Montebello, Richfield and Whittier, A. F. White of the Brea Canyon Oil Co.; from Torrance, Dominguez, Rosecrans, Potrero, Inglewood, Lawndale and Los Angeles, C. Severns of the Republic Petroleum Co.; from Coalinga, F. A. Wells of the Inca Oil Co.; from Bakersfield, L. T. Kohle of the Petroleum Securities Co.; from Playa Del Rey, Robert Bromberg, receiver in equity for several producers, and from the Midway-Sunset Field, J. B. Wells of Snook & Wells, Inc. The members of the committee and their alternates are representative of the constructive element of California independent producers. The election of Paul Grimm as chairman was a judicious move as his familiarity with curtailment problems and his executive ability will enable the committee to function with a minimum of delay. Mr. Grimm was at one time co-umpire with Neal Anderson previous to the consolidation of the umpires' offices and the subsequent election of Mr. Grimm to the presidency of the Pacific Western Oil Co.

Allowable Production

It will probably be another few days before the Central Proration Committee decides on a definite schedule of proration due to the necessity of studying individual production reports and allocating the allowable production of each field. One thing seems certain, and this is the probability the committee will establish a minimum well production, below which there will be little or no curtailment made. R. E. Allen, assistant umpire, in a recent address before the Taft Chapter of the American Petroleum Institute, told those present that "there has been an increasing tendency in California to minimize the influence of potential in distributing allotment. The statement of basic principles recently drawn up for the reorganized curtailment committee states that potential production should be subordinated to the minimum well allotment as a factor of allocation and should be subject to better definition and more methodical usage as a proration factor." This statement confirms the prevailing opinion that the committee will undoubtedly establish a minimum well allotment to equalize the burden of curtailment. The inability of many small operators to adhere strictly to curtailment orders issued heretofore, due to economic limitations has seriously hampered effective curtailment. One of the most important issues to be decided by the new committee will be the determination of the minimum well allotment. There is no unanimity of opinion, estimates running from 15 bbls. to 50 bbls. per day.

A report of Claude C. Brown, gas and electric engineer of the California Railroad Commission, wherein he calls attention to the apparent necessity of placing the destinies of the California oil industry under one head, is of particular interest in view of the new attempt to revive curtailment and proration work. Mr. Brown suggested that the interests of the public and of the producing interests appears to require the appointment of an individual upon whom can be put "the responsibility of creating and maintaining the control of diversified problems of oil and gas production. The recent effort to initiate legislation creating an agency to control oil production in California having been defeated at the polls leaves the situation as it was before. Production and utilization of oil and natural gas are inseparable. If a minimum of natural gas wastage is to be attained its production must vary seasonly. If the production of natural gas is to vary with the demand for it, the consequent production of oil must likewise vary with it. It is not feasible to store large quantities of natural gas because of the high cost."

The outcome of the sessions now being held by the Proration Committee will have a decided effect on the trend of events during the balance of the year. If this committee brings out a constructive and effective method of reducing state production and production is subsequently reduced to the maximum allowable, we may anticipate an upward revision in crude and refined oil prices. If, on the other hand, efforts to reduce production are unsuccessful, we may anticipate the possibility of unsettled prices. In the former event, the upward revision may be expected at an early date, while in the latter case the possible reduction may be retarded until fall, if this can be done, as marketers will undoubtedly make a determined attempt to maintain current quotations during the summer

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	May 7, 1932 Total this week	May 7, 1932 Daily average	Apr. 30, 1932 Total last week	Apr. 30, 1932 Daily average	This year to date	Same time last year
Intercoastal—domestic:						
Diesel and gas oil	.....	.....	.....	.....	116,890	892,230
Gasoline	339,630	48,519	306,749	43,821	2,522,978	5,701,008
Kerosene	23,150	3,307	.....	.....	103,895	41,512
Foreign exports:						
Crude oil	102,148	14,593	88,827	12,690	3,112,380	2,414,812
Fuel oil	122,666	17,524	337,100	48,158	3,595,004	5,409,168
Diesel and gas oil	52,329	7,476	.....	.....	814,064	1,287,544
Gasoline	546,274	78,039	82,628	11,804	3,589,024	3,563,531
Kerosene	111,336	15,905	.....	.....	835,407	559,229
Lubricants	.....	.....	.....	.....	.....	18,978
Naphtha distillates	34,250	4,893	.....	.....	75,425	.....
Coastwise—domestic:						
Crude oil	261,841	37,406	177,090	25,299	5,126,950	7,950,244
Fuel oil	205,897	29,414	192,557	27,508	5,133,935	5,113,875
Diesel and gas oil	66,151	9,450	21,565	3,081	585,513	571,987
Gasoline	547,021	78,146	322,891	46,127	5,538,114	4,501,094
Kerosene	6,548	935	9,736	1,391	63,555	147,041
Naphtha distillates	.....	.....	.....	.....	.....	4,952

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal—domestic:						
Diesel and gas oil	80,225	11,461	.....	.....	151,220	.....
Gasoline	.....	.....	79,748	11,392	293,455	267,499
Lubricants	.....	.....	.....	.....	15,824	14,015
Foreign exports:						
Crude oil	57,114	8,159	.....	.....	635,420	6,010
Fuel oil	.....	.....	.....	.....	521,659	396,924
Diesel and gas oil	.....	.....	35,401	5,057	352,107	232,288
Gasoline	.....	.....	245,648	35,093	1,410,916	1,448,970
Kerosene	.....	.....	25,589	3,656	340,042	292,953
Lubricants	.....	.....	.....	.....	20,884	.....
Coastwise—domestic:						
Fuel oil	77,402	11,057	69,114	9,873	941,454	1,592,398
Diesel and gas oil	.....	.....	8,793	1,256	187,104	88,756
Gasoline	163,748	23,393	88,560	12,651	1,316,535	1,072,307
Kerosene	8,007	1,144	6,309	901	44,285	100,382

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9- 2-15	7,414	suspended
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	6,238	suspended
Co-operative Dev Co., No. 1 Del Rey, Los Angeles Co.	26- 2-15	1,070	sd. sh. drilling
Lawndale Pioneers, Inc., No. 1 Peck, Los Angeles Co.	20- 3-14	6,378	suspended
Barcus, W. I., No. 1 Watson, Los Angeles Co.	28- 4-13	rig	rigged up
Baldwin Oil Co., No. 9 Inglewood, Los Angeles Co.	7- 2-14	3,980	sd. sh. drilling
Baldwin Hills Synd., No. 1 Inglewood, Los Angeles Co.	17- 2-14	4,090	suspended
Rucker & Croul, No. 2 Puente, Los Angeles Co.	27- 2-10	2,200	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	2,700	suspended
Jones, W. L., No. 1 Bell, Los Angeles Co.	31- 2-12	1,593	suspended
Weist Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	4,902	suspended
Blinn & Gray, No. 1 Montebello, Los Angeles Co.	6- 2-11	5,060	suspended
Wardell & Menichini, No. 1 Montebello, Los Angeles Co.	7- 2-11	304	suspended
Yellowstone Oil Co., No. 1 Alhambra, Los Angeles Co.	24- 1-13	3,919	suspended
Rucker, L. W., No. 1 Calabasas, Los Angeles Co.	26- 1-17	1,004	suspended
Caballero Estates, No. 1 Calabasas, Los Angeles Co.	33- 1-16	1,571	gr. sd. drilling
Marble, Willard, No. 1 Chatsworth, Los Angeles Co.	6- 2-16	1,395	suspended
Ajax, Pet., No. 1 Newport, Orange Co.	21- 6-10	7,259	suspended
Nuoil Co., No. 1 Newport, Orange Co.	29- 6-10	1,970	cleaning out
Orangethorpe Pet., No. 1 Brea, Orange Co.	32- 3-10	1,025	cemented
Beck, Alfred, No. 1 Corona, Riverside Co.	8- 4- 6	1,110	suspended
Spindletop Oil Co., No. 1 Salton Sea, Riverside Co.	25- 7-10	3,590	suspended
Duncan, N. I., No. 1 Sagebrush, Riverside Co.	8- 4- 6	1,157	suspended
Colan Dev. Co., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,392	sidetracking
Mason Oil Co., No. 1 Salton Sea, Imperial Co.	1-17-15	666	sd. sh. drilling
Woods, D. H., No. 1 Salton Sea, Imperial Co.	7-11-16	761	sd. sh. drilling
Borderland Oil Co., No. 2 Encinitas, San Diego Co.	29-16- 4	2,677	repair equip.
South Bay Oil Co., No. 1 Border, San Diego Co.	31-18- 2	1,241	suspended
Itasca Pet. Co., No. 1 Mesa, San Diego Co.	33-18- 1	1,701	cleaning out
Oklahoma Oil Corp., No. 1 Palms, San Diego Co.	25-11- 8	1,888	redrilling
Shannon, G. H., No. 1 Kearney, San Diego Co.	14-15- 3	446	suspended

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months at least in the hope that something may develop to alleviate the situation.

Meeting Discusses Situation

The several independent factions must be brought into harmony if the proration program is to attain its maximum effectiveness. As a step in this direction, a meeting was held in Los Angeles early in the week attended by representatives of the Oil Producers Sales Agency of California, the Independent Petroleum Association of California and several independent operators. The primary purpose of this meeting was to bring about definite action on a future equitable curtailment program. It was agreed at this meeting that the Oil Producers Sales Agency and the Independent Petroleum Association of California would each appoint a committee of three representing those organizations to meet at the office of the oil umpire with the members of the Oil Producers Central Proration Committee. Major companies are not participating in any of the general sessions being held, although they are in sympathy with the primary objective. Those in close touch with the situation are of the opinion the present movement constitutes the last attempt at curtailment and that if this movement is unsuccessful major companies will pull out and produce their own oil exclusively. The development of such a situation would not be to the advantage of either major companies or independent producers and would be precipitated only because of economic necessity and the inability to cope with a demoralized situation. Conditions are at such a point that both major companies and independent producers and refiners would welcome a change for the better. Because of this realization, leaders of the industry are quite sanguine over the outlook, although they recognize that the objective can be reached only by a concerted attempt and a strict adherence to curtailment obligations. During the past fortnight the situation at Dominguez has been cleared up and the production reduced to approximately 20,000 bbls. per day. As a result, producers in other fields should be in a position to effect the additional curtailment necessary to bring state production down to the allowable maximum.

Gas Waste Suit

As the result of an agreement reached between operators and lessors in the Dominguez Field relative to curtailment of crude oil production and its attendant decrease in production of natural gas, Superior Judge Edmonds has deferred his decision with respect to the preliminary injunction sought by the state to enjoin Dominguez operators from further waste of natural gas. The hearing involving the Dominguez gas waste suit extended over several days and the decision of the court was expected to be announced May 16. On this date, however, the court granted a continuance until June 20 upon being informed that a tentative agreement had been reached between operators in the field and interested landowners, as a result of which the lessors granted operators permission to resume curtailment of production. Counsel for the Union Oil Co. informed the court that with the lapse of the granted continuance he was of the opinion the court would not be asked for a ruling on the case in question. James S. Bennett, representing the director of natural resources, consented to the continuance of the litigation. In requesting the continuance, the court was also assured that the tenor of a preliminary order made during the trial, taking nine wells off production and effecting a daily reduction in natural gas production of 5,000,000 feet, would be continued during the period of the continuance.

As a result of the agreement reached

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Standard, No. 1 Santa Rosa Island, Santa Barbara Co.	.....	....	grading
Barnsdall, No. 1 Los Alamos, Santa Barbara Co.	31- 8-33	4,296	br. sh. drilling
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	9,200	hd. sd. drilling
Wilson, N. S., No. 1 Los Alamos, Santa Barbara Co.	3- 7-35	4,868	br. sh. drilling
Equity Oil Co., No. 1 Coal Oil Point, Santa Barbara Co.	24- 4-29	2,110	suspended
Bolsa Chica, No. 2 Coal Oil Point, Santa Barbara Co.	25- 4-29	....	location
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co.	12-10-27	rig	rigged up
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	3,345	suspended
The Texas Company, No. 1 Carpinteria, Santa Barbara Co.	33- 4-25	954	sd. sh. drilling
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
Woodrow Pet., No. 1 Miguelito, Ventura Co.	4- 3-24	2,147	sd. sh. drilling
Bell, E. H., No. 1 South Mountain, Ventura Co.	22- 3-21	2,484	suspended
Magu Synd., No. 1 Oxnard, Ventura Co.	17- 1-25	5,813	fish for D.P.
American Oil Co., No. 1 Conejo, Ventura Co.	33- 2-20	1,590	cleaning out
Graham & Loftus, No. 1 Goose Lake, Kern Co.	20-27-22	6,619	cleaning out
General Pet., No. 1 Buttonwillow, Kern Co.	6-28-23	3,094	suspended
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	7,000	perforating
Milham Expl. Co., No. 14 Buttonwillow, Kern Co.	7-28-23	rig	rig rotary
Purman, T. H., No. 1 McKittrick, Kern Co.	22-29-21	3,963	suspended
Welport Oil Co., No. 3 McKittrick, Kern Co.	26-29-21	1,298	recemented
General Pet., No. 1 Belridge, Kern Co.	30-28-21	3,260	suspended
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	4,222	suspended
Rio Grande, No. 1 Shale Hills, Kern Co.	7-27-19	963	sd. sh. drilling
Rio Cal Pet., No. 1 Shale Hills, Kern Co.	2-27-18	2,355	suspended
Fullerton Oil Co., No. 6 Semitropic, Kern Co.	14-27-23	1,464	sd. sh. drilling
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	17-26-18	3,225	suspended
Gauthier, C. B., No. 1 Devils Den, Kern Co.	24-25-19	rig	rigging up
Fowler, F., No. 1 Blackwell Corner, Kern Co.	15-26-19	1,031	sd. sh. drilling
Regina Oil Corp., No. 1 Mojave, Kern Co.	26-10-14	2,790	cleaning out
Meridian Oil Co., No. 1 Mojave, Kern Co.	11- 9-15	4,000	suspended
Harding, J. B., No. 1 Mojave, Kern Co.	5-10-10	1,030	redrilling
Barnsdall Oil Co., No. 1 Tejon, Kern Co.	15-11-20	6,400	sd. sh. drilling
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	6,025	suspended
Descanso Oil Co., No. 1 Tejon, Kern Co.	31-11-19	2,749	suspended
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	6,197	suspended
Kingsburg Expl. Co., No. 1 Kingsburg, Fresno Co.	30-16-23	2,741	sd. sh. drilling
Kent & McDonald, No. 1 Carrizo Plains, San Luis Obispo.	3-32-22	2,693	redrilling
Emerich Oil Co., No. 1 Carrizo Plains, San Luis Obispo Co.	22-32-22	1,320	suspended
Trav-El Oil Co., No. 1 Carrizo Plains, San Luis Obispo Co.	7-32-22	2,450	cleaning out
Indian Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	26-31-12	3,352	suspended
Martin, J. D., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,070	suspended
Paso Robles Oil Co., No. 1 Edna, San Luis Obispo Co.	27-27-11	4,191	suspended
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	1-29-13	1,450	suspended
Pacific Inland, well No. 1, Monterey Co.	19-23-15	2,340	suspended
Brown, W. F., No. 1 Parkfield, Monterey Co.	16-23-14	1,051	suspended
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Woodward, Glen, No. 1 Dudley Ridge, Kings Co.	32-22-20	416	sd. sh. drilling
Scott Bros. Drlg. Co., No. 1 Dudley Ridge, Kings Co.	18-22-19	899	sd. sh. drilling
Local Natural Gas Co., No. 1 Dudley Ridge, Kings Co.	32-22-20	541	sd. sh. drilling
Kettleman Natural Gas Co., No. 1 Dudley Ridge, Kings Co.	18-22-19	1,100	suspended
Irma Investment Co., No. 2 Dudley Ridge, Kings Co.	7-23-20	1,224	suspended
Dudley Dome Oil Co., No. 1 Dudley Ridge, Kings Co.	9-23-20	rig	rigging up
Eagle Oil Co., No. 1 Dudley Ridge, Kings Co.	15-23-20	1,125	gas—shut in
Eagle Oil Co., No. 2 Dudley Ridge, Kings Co.	15-23-20	911	suspended
Tulare Basin Gas Co., No. 2 Dudley Ridge, Kings Co.	2-23-19	mtl.	building rig
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	5,894	cleaning out
Kettleman Ridge Oil Co., No. 1 Avenal, Kings Co.	10-23-16	1,148	cleaning out
Magee & Stone, No. 1 Alpaugh, Kings Co.	24-24-22	3,660	suspended
Guess, E. B., No. 3 Dudley Ridge, Kings Co.	12-23-22	1,798	suspended
Ingraham, R. H., No. 1 Porterville, Tulare Co.	24-22-27	....	location.
Ducor Pet. Co., No. 1 Ducor, Tulare Co.	14-24-27	2,200	suspended
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Gravity Expl. Co., No. 1 Alpaugh, Tulare Co.	11-24-23	2,207	suspended
Ellis & Sanford, No. 1 Tulare Lake, Tulare Co.	20-24-23	1,920	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	7,694	suspended
Napa Oil Co., No. 1 Griffith, Napa Co.	7- 8- 3	2,848	cleaning out
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	1,040	suspended
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	4,750	suspended
Hilderbrandt, R., No. 1 Crows Landing, Stanislaus Co.	36- 6- 7	1,130	suspended
Rushing Oil Co., No. 1 Waterford, Stanislaus Co.	20- 3-12	2,594	sd. sh. drilling
Pacific Northern Oil Co., No. 1 Guinda, Yolo Co.	23-12- 3	2,658	sd. sh. drilling
Easton & Monell, No. 1 Colma, San Mateo Co.	25- 3- 6	3,124	sd. sh. drilling

between lessees and lessors, production of the Dominguez Field has been pinched back from approximately 31,000 bbls. per day to a little over 20,000 bbls. The resumption of curtailment work in this field has been reflected in state production with the result that during the current week it is substantially below the output during the preceding week. The substantial curtailment effected in the Dominguez Field, together with several minor reductions made in other fields, caused state production to drop to 499,001 bbls. on May 15. State production increased the following day to 502,744 bbls., however, and has since continued to average around 505,000 bbls. per day. This is approximately 50,000 bbls. per day in excess of the current allotment of 456,700 bbls. per day. There were no wells put on production in the Dominguez Field during the week and, while it appears probable that one well will be finished within a few days, operators have tentatively agreed to hang up their tools for an indefinite period. The well scheduled for completion within the next day or two is the Union Oil Co.'s No. 18 Hellman, bottomed at 4,873 feet and finished with a 4¾-inch liner carrying 242 feet of 120-mesh screen. The Republic Petroleum has reached a depth of 4,400 feet in No. 1 Childs, an edge well, and, unless something unforeseen should develop, should reach the third Callender zone within two weeks, at which time it will be given a production test if developments warrant. No. 29 Callender of the Union, finished in the Dominguez Field during the latter part of last week, showed a maximum daily potential of 1,050 bbls. and has been pinched back to 474 bbls. per day.

Coyote Hills

The Standard Oil Co.'s No. 109 Murphy, a new well in the West Coyote Field of Los Angeles Basin, failed to have sufficient kick to result in a natural flow upon completion a few days ago and it has been put on the beam. This project, bottomed at 5,940 feet but subsequently plugged back to 5,839 feet, was brought in pumping 144 bbls. of 27.1 gravity oil per day, the hole having been finished with a 6⅝-inch liner including 438 feet of perforated and 4,877 feet of 2½-inch tubing. The Standard still has one incompleted drilling project under way in the West Coyote Field, but it will probably be several weeks before the deep pay is reached. In the Potrero Field, the Wilshire Annex Oil Co. is redrilling and deepening No. 1 Neace, a former upper zone producer, and it is the intention to carry this well down as a deep test. On the Potrero Country Club property, the Wilshire is rigging up rotary equipment in No. 3 preparatory to an early spud. The company is reconditioning Nos. 1 and 2 on the same property and has staked location for another new well. The Wilshire's No. 1 Potrero was mudded off several weeks ago by rotary drilling mud from No. 2, since which time the company has been unable to rejuvenate it.

Huntington Beach

Although the electorate on May 3 defeated an initiative petition permitting tideland development within the corporate limits of Huntington Beach, the citizens of this municipality have not given up hope of ultimately achieving this goal. The attempt to develop the Huntington Beach tidelands was reopened by the action of the city council inaugurating a movement to place an initiative amendment to the state constitution before the people of the state on the November ballot. This proposed change would give municipalities complete control of tidelands within their corporate limits and thus permit drilling. In reopening this movement, the Huntington Beach City Council leased tidelands in the western section of the city to the California Exploration Co., Ltd., for a period of 30 years, the lease being contingent on the passage of the initiative amendment to void the existing tideland ban. Under the terms of the lease consummated with the California Exploration Co., the city of Huntington Beach is to receive a bonus of $100,000 payable in oil and a one-sixth of the oil as royalty. The Huntington Beach Chamber of Commerce subsequently adopted a resolution protesting against tideland drilling and launched a movement to obtain the passage of a new bill which would turn the tidelands over to the city with the stipulation that drilling operations would be prohibited. There is very little development work of any kind under way in the Huntington Beach Field and there is not much likelihood development work will be increased during the next several months. S. S. Wold has recently staked location for a new well in this field and Ben F. Mun has made location for two additional wells. It is problematical just how soon this projected work will get under way.

Kettleman Hills

The Associated Oil Co. is having considerable difficulty in completing No. 3 Whepley, a new well in the North Dome of Kettleman Hills, and will probably be obliged to add a little more hole before commercial production is secured. This new well, bottomed at 7,536 feet and finished with a 5-inch liner including 400 feet of perforated, has been swabbed for several days but apparently does not have sufficient kick to result in a natural flow. No. 3 Whepley is approximately 370 feet shallower than No. 1 Whepley, which is flowing 1,410 bbls. of 40.8 gravity oil and 1,250 feet shallower than No. 2 Whepley, flowing 1,172 bbls. of 38.1 gravity oil per day. The Associated is testing out the uppermost part of the Temblor in No. 3 Whepley and it begins to look as though the result of this test will be negative. The Kettleman North Dome Association is expected to finish two new wells at Kettleman Hills some time within a few weeks. The potential producers are No. 21-1-P, rotating at 8,210 feet, and No. 58-20-J, making hole at 8,250 feet. The Association's No. 36-30-J, located out on the extreme west flank of the structure in Section 30-21-17, logged the Bentonite at 7,983 feet and is coring in brown shale at 8,015 feet. This well is running approximately 100 feet deeper than projected by engineers before the hole was spudded in. This indicates very careful engineering study by the Association's geological department and their ultimate expectation of a substantial completion will probably be realized within 60 days. The Association has resumed work in No. 81-10-P, a well which has been standing suspended for more than a year at 6,907 feet. This project was drilled down to the point of suspension by the Standard Oil Co. before this Armstrong permit became a component part of acreage turned over to the Kettleman North Dome Association.

The Lincoln Petroleum Corp. has confirmed the completion of a deal whereby its interests in Kettleman Hills have been sold to the Shell Oil Co. for a cash consideration of $425,000. The Lincoln Petroleum Co., headed by R. E. Bering, recently entered a leasing campaign in Yolo County, approximately 100 miles north of San Francisco, in conjunction with other interests through the forming of the Reserve Oil & Gas Co. The latter company controls approximately 20,000 acres, of which 5,000 acres represents the holdings of the Lincoln Petroleum Co. Fruitvale, the most active field in the San Joaquin Valley at present, with five drilling wells to its credit and four additional projects scheduled to get under way, has maintained a consistent daily production of approximately 4,500 bbls. for several months. This field has a rated potential daily production of 11,190 bbls. and could easily reach this figure if for any reason it was decided to do so. The Doyle Petroleum is running liner in No. 1 Haberfelde, a reconditioning job, and this potential producer, in Section 21-29-27, should be on production in the near future. No. 1 Knoles of the Treasure Oil Co., No. 2 Price-Stewart of the Western Gulf and the Bankline Oil Co.'s No. 1 should also be finished in the near future.

North Belridge Field

The Belridge Oil Co.'s potential deep zone discovery in the North Belridge Field of Kern County is expected to be back on production in the very near future. This well, which blew in late last week, subsequently sanded up but was ultimately brought under control. The hole is being cleaned out and a conclusive production test will be made as soon as the liner is run in and other necessary work completed. This well is expected to give a good account of itself as it blew in last week flowing approximately 25,000,000 feet of wet gas per day with the hole cleaned out only a few feet below the shoe of the 8⅝-inch water string. If the crew succeeds in cleaning out to bottom, 8,056 feet, the well should do better than 75,000,000 feet of gas per day. The Belridge Oil Co. spudded in No. 35, a new well, early in the week, and it is the intention to make this well a deep test for Section 35-27-20. No. 49-35 has proven to be somewhat of a flivver at 5,595 feet, as the Belridge Oil Co.'s engineers could not increase its daily production above 55 bbls.

The Associated's deep test in the prolific Ventura Avenue Field has just passed the 9,300-foot level and, since tentative plans call for completion at approximately 9,600 feet, this depth should be reached before the close of the month. If the amount and saturation of oil sand logged is any criterion, the well should result in substantial production. The crew has encountered extremely heavy gas pressure, necessitating the use of heavily fortified drilling mud on several occasions. If this well results in substantial production, and every indication points in this direction, it will greatly enhance the holdings of the Associated and Shell in this remarkable field. It may likewise become the largest deep zone producer if it is permitted to remain on production. The drilling of this well is of more than passing interest, not only because of the extreme depth recorded, but also because it indicates that the bottom of the productive formation has not yet been reached in this field. The statement made several years ago that no well located on top of the Ventura Avenue structure had drilled entirely through the productive formation still holds true. Several years ago the writer ventured the opinion that commercial production could be anticipated to a depth of approximately 10,000 feet. This objective has not yet been reached but the original prediction, like that with respect to drilling entirely through the productive formation, still holds good.

GILBERT E. RYDER DEAD

Gilbert E. Ryder, vice president of the Superheater Co., New York and Chicago, died Tuesday, May 17, in his home in Larchmont, N. Y., from a heart attack.

STOCKS OF CRUDE AND REFINED OIL HELD IN PACIFIC COAST TERRITORY
(Barrels of 42 U. S. gallons)

	1932					Increase January 1 to April 30, incl.
	January 1	January 31	February 29	March 31	April 30	
Heavy crude and residuum	99,301,196	98,914,561	98,806,315	97,992,316	98,116,932	*1,184,264
Refinable crude	41,895,200	42,302,110	42,167,334	42,154,553	42,434,600	539,400
Gasoline and engine distillate	15,820,753	16,621,657	17,818,437	17,646,369	18,442,175	2,621,422
Naphtha distillates (tops)	4,105,131	4,353,539	4,788,185	4,809,449	4,491,020	385,889
Other refined products	8,713,669	8,252,187	8,001,919	7,886,300	7,892,056	*821,613
Total all stocks	169,835,949	170,444,054	171,582,190	170,488,987	171,376,783	
Total monthly increase		608,105	1,138,136	*1,093,203	887,796	1,540,834

*Decrease.

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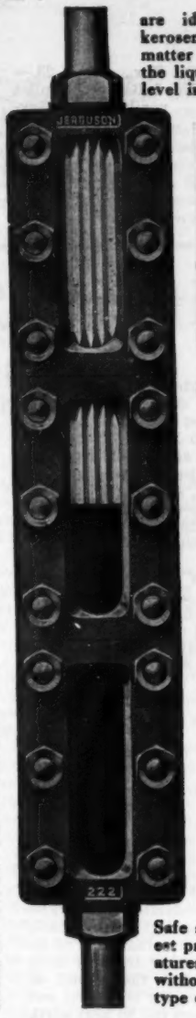

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Duval County Well Holds Interest

Suttle and Others' No. 1 Bennett, Which Made Promising Drill Stem Test, Has Casing Set, Ready to Be Drilled In

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., May 23.—Suttle and others' No. 1 Bennett, 3 miles north of the Government Wells Field in Duval County, got casing set at 2,290 feet with 150 sacks of cement last Friday and the plan was to drill in and test Tuesday of this week. The well created unusual interest due to the fine showing on drill stem test when it went over the derrick in a few minutes with a stream of oil and showing no water. The test cored rock at 2,288-89 feet and under the rock a gas sand down to 2,309 feet and from there down to rock at 2,327-28 feet shale and under the last rock it cored not over a foot into oil sand, stopping in sand.

Casing has been set on the upper rock, presumably with the idea that the gas above 2,309 feet will assist in producing the oil.

In the naming of pools in Southwest Texas the society of geologists classes this new production with the Government Wells Field 3 miles south as being the same structurally, but the Smith & Capps production in Surveys 576 and 574, 2 miles southwest of the Government Wells south extension, is judged to be structurally separate and has been named the Sarnosa Field.

More development is really necessitated by offsets around the Smith & Capps well than around the Suttle and others test in Survey 44. Magnolia holds the lease on the 40 acres next north of Suttle and also the diagonally northeast 40. Suttle owns the lease on the 40 acres the test is on and the one east of it and the one south of it and will drill the east offset when it is necessitated. Suttle also owns 40 acres in the next survey south, holding in all 160 acres that is well located, besides some other tracts a little farther east. Sun owns the second 40 acres north of the one the test is on and Seacord & Putnam own the 80 next north and the 40 next west of the Sun besides additional acreage.

May Be in the Play

H. H. Coffied has made a location in the southeast quarter of Survey 43, which is next west of 44 and since the trend may be a little to the west of south, the Government Wells Field being 1 mile west and 3 south, some of this acreage would seem to be in the play.

John F. Camp, who got a dry hole in the No. 1 Weil over a mile nearly due south, has moved 1,200 feet north, 20 degrees west of his first test in Survey 570, and is rigging up for another hole that may extend the field to the south.

American Gas Co. is taking over the Suttle and others' test and set the casing. While the territory around it is thought to be structurally the same as the Government Wells Field there is yet much to be learned about the field by further drilling. The field is repeating the history of the one on the south where the first test a mile or so west led operators to move west for subsequent locations. In the northwest corner of Survey 63, which joins the southeast corner of Survey 44, the Magnolia drilled a test a few years ago and failed to make a well but got some showings that led Seacord & Putnam to drill recently in 44 and get gas at 1,574 feet.

There are some theories that the area is terraced and that the Suttle test is one terrace above the Magnolia test and that Seacord & Putnam are on still another above Suttle in which event a lot of acreage lying west of the Seacord & Putnam well would look extremely good.

Starr County

Late in the week Edwin M. Jones' No. 1 Chatfield at 1,439 feet and located 1,100 feet west of the Heard & Heard discovery well at Rio Grande City had not yet found the sand that was topped in the discovery well at 1,375 feet and was continuing to core. Jones is rigged up with two boilers and heavy machinery and probably will keep going. His elevation is 219 feet compared with 173 for the Heard & Heard well on the Goodrich and his location is supposed to be up the dip and he is already 18 feet deeper on subsea figures.

R. E. Johnson, who started the No. 1 Goodrich afterward completed by Heard & Heard, is down 1,410 feet on his No. 1 Seabury, located about a mile west of Jones, and had not yet found the sand. O. W. Killam, a couple of miles southeast of the discovery well, has abandoned his No. 1 Woods at around 2,500 feet and will make another location. Sioux Oil Co., under which name the Heard & Heard properties are now operated, has spudded in its No. 2 Goodrich between the discovery well and Jones' No. 1 Chatfield and King Pin Oil Co.'s No. 1 Lewis, a mile southwest of the discovery well, has derrick up and Gulf Coast Oil Co.'s No. 1 Peres, between the King Pin test and the discovery well, has derrick up. Also Hoffman's No. 1 Goodrich, a half mile south and slightly east of the discovery well, has spudded in and is drilling. Coastal Oil & Gas Co.'s No. 1 Olivarez, about a half mile or more west and a little north of the discovery well, has derrick up. There is something on every side of the discovery well except east and north and it will not take more than a week or so for most of them to render a verdict on the 1,375-foot sand. Tarver & Nance, 2 miles east and a little south of the discovery well, are down 2,500 feet on the No. 1 Guerra and drilling.

Geologists hold that the field at Rio Grande City is not the same structurally as the Los Olmos Field about 8 miles northwest, and have given them separate names.

In the Los Olmos shallow field there has not been as much activity and interest the past week but some of the wildcat tests around are making pretty good progress. Laborde, about 3 miles south of the shallow field, at around 375 feet has got started on the No. 1 Marroquin, and Griffin, not quite so far south of the shallow field, below 1,200 feet on the No. 1 Kelsey Bass, and Coast Oil & Gas Co., down around 600 feet on the No. 1 Kelsey-Bass approximately 8 miles northeast of Rio Grande City.

Corpus Christi District

Two tests have set casing and will drill in within the week in the Saxet Field that may disclose something new. Tule Lake Oil Co.'s No. 1 Hocker & Sevier set casing after a drill stem test at 4,074 feet had shown 11 fourbles of oil in nine minutes. It was to drill in some time after the middle of this week. It is about 1,600 feet west of the No. 1 Roark, drilled some months ago that had such a good showing at 4,823 feet and is about a mile north of a string of five or six wells producing at slightly less than 4,100 feet running east and west through the middle of the field. It didn't have much gas pressure which is thought favorable for production. The sand was topped at 4,065 feet.

Elevations are not considered in the Saxet Field since with few exceptions there is not more than 1 foot difference in elevation and on a 4,000-foot test the measurements could easily be off that amount.

Two miles west of the Tule Lake test Rutherford's No. 1 Hunter, an east offset to three wells producing at about 4,560 feet, has set casing at 4,807 feet after a drill stem test made a good oil showing. There is no production at this time from that depth but the No. 1 Roark just mention had an excellent showing at about that depth and some other tests have logged the sand with showings of oil.

Gulf Coast Oil Co.'s No. 1 Perkins & Gasse reported recently as running wild at 4,560 feet and located considerably north of the only three producers in the field at that depth and mentioned above, is still wild and untamed. The company had erected a derrick for the No. 2 Bessie Elder, which will be a south offset to the No. 1 Perkins & Gasse.

A deep test deal is being framed up for the territory next north of the Kingsville Field in Kleberg County, which will be watched with interest, and two others in the territory north of Aransas Pass in San Patricio and Aransas Counties. Derrick for the Carter's No. 1 Simmons, south of the Kingsville Field, blew down recently in a storm. The test was standing at 3,205 feet waiting for water. The same storm took down derricks here and there at intervals over Southwest Texas.

Alice District

Carroll Brown has made location for a test 900 feet from the east line and 600 feet from the north line of Tract 4-A of the Charles Seefeld farm lots, 5 miles south of Alice and about 2,500 feet northwest of the old Diamond S Oil Co. No. 1 Deering, drilled 10 years or more ago to 4,344 feet, at that time the deepest hole in Southwest Texas. It had quite a showing of oil and gas, but was unable to make a well.

South of San Diego in Duval County and southwest of Alice, the Sun Oil Co. is core-drilling a block on which it holds a commercial lease.

Northeast of Alice the storm took down the derrick for the F. A. Lain No. 1 Porter. It is being rebuilt. Sloane has started and is down 1,100 feet on the No. 1 Wade, both it and the Lain test being in northeastern Jim Wells County.

Balcones Fault Zone

Lloyd Bender's No. 1 Suburban irrigated farms in southwestern Bexar County has set casing at about 1,160 feet with total depth 1,190 feet and in the Anacacho with a pretty good showing. It was to drill in the middle of this week. This is the only wildcat along the Balcones at this time that is showing up for anything.

In the Luling area Rayor's No. 1 Kreus is a dry hole. It is a few miles northeast of the Bob Rose No. 1 Pierce, which came in a big well opening the Dunlop Pool 2 miles northwest of the town of Luling. The No. 1 Kreus, with elevation of 481, topped the Edwards at 2,727 feet. The Meyer No. 1 Walker, 1 miles north of Bob Rose's discovery well, having been a failure the week before, leaves that district with nothing drilling. However, the Empire Gas & Fuel is starting to rig up on a direct south offset to the Bob Rose well.

In the Webster Pool between the Branyon and Buchanan Pools and northeast of Luling there will be no important developments for a couple of weeks or more. The No. 1 McCrory is an oil well in the Edwards. It is not a large well but is seemingly a good one. It recently shot the casing at the Buda since there was no water to both and the Buda had shown considerable oil and it was thought this might help out and add to the production from the Edwards. It is being cleaned out and will be put on pump after which the rig will be moved to the No. 1 Robertson a little southwest. Since no one has any acreage except the C. J. Webster Oil & Gas Co. the further possibilities of the field wait on that company's development with two locations made, one southwest and the other northeast of the producer.

Pettus District

The Texas Company's No. 4 Gremmel, the farthest west location in the Pettus extension, 450 feet west of the No. 3 Gremmel, started off refusing to flow, but with the use of gas from other wells started at around 200 bbls. and increased up to 500 bbls. daily without the further use of gas, making one of the best wells in the field.

Coquat and Hawn abandoned the No. 1 Roberts south of the Cosden pool and north of the Pettus extension, a dry hole at 4,125 feet below the sands in both fields and evidently in a fault. Slick-Seeligson, Inc., are starting their No. 6 Ray, located 500 feet north of their No 3 Ray, and about 2,000 feet south of the test just abandoned by Coquat and Hawn.

Allen & Morris, whose No. 1 Holbien-Wormser blew out at 1,819 feet in northwestern Brooks County, had to abandon the hole due to corkscrewed casing and are skidding the rig a few feet.

Jacob, Buzzini & Pickett, who recently brought in a field at 962 feet in northeastern McMullen County, are completing their second well and have made locations for two semiwildcats, 1 to 2 miles north and west of their discovery well.

SOUTHWEST TEXAS PROVEN AREAS

Week Ending May 21

YOST FIELD—BASTROP COUNTY

Campbell & Tong's No. 3 Yost, 300 ft. SE of No. 7 Yost, A. Garcia Sur. ..... Location.

COSDEN POOL—BEE COUNTY

Henderson Coquat's No. 1 Leroy Roberts, 300 ft. from W line of lease, 300 ft. N of NE cor. of Gremmel tract ..... Drlg. 4,058 ft.

NORMANNA POOL—BEE COUNTY

Gulf Coast Oil Co.'s No. 1 Hicks, 300 ft. S of Nichols Oil Co.'s No. 1 Hicks ..... Abnd. 4,595 ft.

PETTUS POOL—BEE COUNTY

Slick-Seeligson's No. 6 Ray, 400 ft. N of No. 3 Ray and 150 ft. from W line of lease and survey. ..... Rigged up.
The Texas Company's No. 4 Gremmel, 450 ft. W of No. 3 Gremmel in (south) John Pace Sur. ..... T.D. 3,877 ft.; comp. 500 bbls. oil.
United Prod. Co.'s No. 42 Ray, near No. 31 Ray ..... T.D. 3,730 ft.; drlg.
United Prod. Co.'s No. 43 Ray, NE of field ..... T.D. 3,270 ft.; drlg.

COOKSEY POOL—BEXAR COUNTY

Chiquita Oil Co.'s No. 3 Pollock, 330 ft. from S line and N offset to Chiquitas No. 1 Hunter in J. W. Rialls Sur. ..... T.D. 1,530 ft.; bailing.

ECKERT POOL—BEXAR COUNTY

Alamo Nat. Gas Co.'s No. 3 J. H. Gembler, 180 ft. from N and E lines of tr. in A. Manachaca Sur. 51.. T.D. 1,216 ft.; drlg.
E. M. Carl's No. 1 F. Gembler, 160 ft. from N line, 750 ft. from E line of tract in J. Montes Sur. ..... T.D. 470 ft.; set csg.
F. H. Eckert & Son's No. 1 Louis Brehm, W offset to No. 3 John J. Brehm ..... Location.

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Ten Completions in Central Ohio Field

One in Illinois and One in Old Lima Field. Legrande Field, Kentucky, Operators Shut Down Owing to Price of Crude

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, May 23. — Outside of the Central Ohio division, very few completions were reported from the Central West Field although Kentucky made a better showing than for a number of weeks. At present the bulk of the work in the Legrande Field of Hart County has been shut down, owing to the price of crude, and if reports are true little work will be done there until the dollar-a-barrel price has been reached.

In the old Lima Field of northwestern Ohio, only one completion was reported, being E. S. Holsinger and others' test on the Andrew D. Bickler farm, Section 14, Hopewell Township, Seneca County, which produced but 3 bbls. from the Trenton lime from 1,509-30 feet. Charles Shaw and others are drilling on the James F. Kuhn, Section 13, same township. Sandusky Gas Co. is drilling No. 1 Lorenzo D. Creeger, Section 15; Ray Temple is drilling No. 1 Ray Knepper, Section 11. Industrial Oil & Gas Co. is drilling No. 1 Mathias W. Hunker farm, Section 11, McPheron and others' No. 3 Frank Fox farm, same section, nearing the Trenton lime, as is J. H. Murphy & Sons' No. 3 Cyrus D. Knepper farm, Section 11, all in Hopewell Township. In Seneca Township, Jones and Coyle are drilling on the James D. Watson, Section 28, same county.

Trager heirs are drilling No. 4 on the Trager heirs farm, Section 7, Pleasants Township, Hardin County.

In Wyandot County, Erie Oil & Gas Co. is drilling on the Oscar Margroff farm, Section 8, Tymochtee Township. McPheron and others are drilling No. 5 Bowman-Billhart farm, Section 21, same township, and No. 1 Edward Walton farm, Section 10, Crane Township, same county, which if it is a producer, will open up a new lead for development work in that township.

CENTRAL OHIO

Ten completions were reported from the Central Ohio Field, three of which were oil producers with an initial of 65 bbls., three gas wells and four dry holes. The best of the oil wells was drilled by the East Ohio Gas Co. in a second test on the Clarence Dillon farm, Section 10, Wheeling Township, Guernsey County, which produced 40 bbls. from the Niagara lime formation from 3,266 to 3,446 feet. Charles Smith and others are drilling on the House and Wilson land, in the four quarter of Cambridge Township, same county.

In Fairfield County the City Natural Gas Works' No. 5 Henry Hartman farm, Section 23, Pleasants Township, is a light gas well in the Lime formation from 1,887-97 feet.

In Medina County, Edson Sons Co.'s No. 23 A. W. Shaw farm, Section 13, Chatham Township, produced an initial of 20 bbls. from the Berea sand from 268 to 294 feet. Same company's No. 37 George W. Packard farm, Section 3, same township, was dry from 355 to 377 feet. Oko Oil & Gas Co.'s No. 55 Henry Essig, Section 13, was dry at 392 feet, as was the same company's No. 15 L. A. Watson, Section 3, same township, at 350 feet.

In Licking County, Earl Brothers' No. 2 on the Sam E. Walpole, Section 23, Madison Township, pumped 5 bbls. from 750 to 762 feet.

Hopewell Oil & Gas Co. is drilling on the J. C. and F. Daton farm, Section 21, Washington Township, Tuscarawas County.

Ohio Fuel Gas Co. drilled a gas well in No. 1 Brown-Humphrey farm, Section 35, Union Township, Belmont County. Bradfield and others are drilling No. 2 Margaret Campbell farm, Section 2, Kirkwood Township, same county and also drilling a second test on the T. A. McCort-Patterson farm, in Somerset Township.

Penn Crude Oil Co. found a dry hole on the H. and A. Miller, Section 5, Knox Township, Columbiana County, which went 115 feet in the Clinton to a total depth of 5,240 feet, and was dry.

William Stricker and others' No. 9 on the William Stricker, Lot 23, Mary Ann Township, Licking County, is reported good for only 2 bbls. initial.

In Medina County, Oko Oil & Gas Co.'s No. 31 Sanford Watson farm, Section 10, Chatham Township, is reported dry at 350 feet. Barnhart and others' No. 8 Joseph W. Funk farm, Section 6, Harrisville Township, same county, said

(Continued on Next Page)

Oppose Turner Valley Restrictions

Action Begun Challenging New Conservation Board. Rapid Headway Being Made in Test in Athabaska Area

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, May 21. — In northern Alberta, Athadome Oils' No. 1 spudded in last week, and is reported making rapid headway. Location is in NE section 20-72-24w4, about 5 miles northeast from the Athabaska River. This is the first of a series of three wildcat tests to be drilled by F. H. Stover & Son, contractors, for Athadome Oils, Ltd., of Toronto, which holds leases on some 32,000 acres in this area.

The same general area was tested last year by Crudome Oils, Ltd., of Toronto whose No. 1 well in LSD 16, Section 24-72-25w4, was carried to a reported depth of around 900 feet, encountering a show of heavy crude. This test has been standing idle for some time. Athadome's No. 1 is east and a little south of Crudome's No. 1. The Athadome contracts call for three tests to be drilled to a maximum of 1,550 feet unless production is previously encountered. Drilling is in personal charge of F. H. Stover, who has had extensive experience in eastern Canada and the United States and has drilled a number of wells in western Canada, including Fort Norman Oil Co.'s No. 1 test in the Fort Norman Field. Roy C. Skene is on the ground for the Athadome company which is financed largely by interests in eastern Canada.

Getting equipment on the ground proved exceedingly difficult, owing to the fact that the spring break-up on the Athabaska came earlier than anticipated. Drilling equipment had to be taken from Smith by the river route, at a time when the stream was in high flood with plenty of floating ice. After this part of the journey was completed without serious mishap, the equipment had to be hauled overland over several miles of soft and tricky muskeg to location. There was no defined trail and the wagons were usually hub deep. The country is practically a wilderness, with moose, bears, lynx, rabbits, partidge, ducks and other wild game, as well as abundant fishing. It is expected that No. 1 test will be completed by July, and the series of three wells finished before the freeze-up next fall. Further development will depend on the results of these three tests.

Conservation Move Challenged

Steps to challenge the recent restrictions imposed on the Turner Valley Field by the new Gas Conservation Board have been taken by Spooner Oils, Ltd., and Richfield Petroleums, Ltd. The former company has instituted an action naming the attorney general of Alberta and the conservation board as defendants while the Richfield company has added Judge A. A. Carpenter, chairman of the board. The litigation is designed to test the validity of the legislation under which the board was appointed.

Spooner Oils, Ltd., claims that some $396,349.77 invested by its shareholders in the company will be prejudicially affected by the restrictions, under which its crude naphtha outfit will be reduced from around 90 bbls. a day to a potential of 4.7 bbls. Richfield Petroleums, Ltd., which in April had deliveries of 379 bbls. is cut down to a potential of 4.6 bbls.

The actions are based on the allegation that the restriction actually imposed on the gas flow of the field is not in accordance with the terms of the act under which the conservation board was appointed, and that the act itself was ultra vires in several respects. The plaintiffs ask for an injunction restraining the board temporarily and permanently from interfering with the gas flow, and for declarations that the act, or parts thereof, are ultra vires.

The actions will be opposed by the province of Alberta, represented by W. S. Gray, K.C., and J. J. Frawley of the attorney general's department and by the board, which will be represented by A. L. Smith, K.C., of Calgary. It is expected that as a test of the validity of the conservation measures the litigation will ultimately be carried to the imperial privy council for final adjudication.

Separate Naphtha in Wells

A scheme has been advanced by W. S. Herron, Turner Valley oil operator, for conserving natural gas and at the same time permitting the maximum production of crude naphtha. The scheme involves the installation of small tubing in the well. This tubing acts as a separator within the well and obviates the use of an outside separator, the greater part of the gas being shut in while the naphtha flows from the well.

Frank P. Fisher, technical advisor to the conservation board, has intimated that the scheme may be tried out with one well after the testing of the field is completed.

Shareholders of the McLeod Oil Co. at an adjourned meeting recently elected directors, the new board being later organized as follows: President, W. E. McLeod; vice president, H. P. McLeod; managing director, E. H. McLeod; secretary treasurer, J. G. Edgar; directors, W. S. Herron, A. V. Smith, George Wittichen. The retiring directors were R. J. Hutchings, George Cloakey and F. F. Reeve.

South Turner Valley

In the Mercury area, South Turner Valley, Hylo Oils' No. 1, LSD 12, Section 4-19-2w5, is drilling out cement. Some crude oil, averaging around 50 bbls. a day, is being taken between the 6-inch and 10-inch casing.

Miracle Oils' No. 3, LSD 11, same section, is ready to resume drilling. Latest estimates place the potential crude production from the lime around 22 bbls. a day.

Red Coulee Field

On the Montana end of the international Red Coulee structure, Askalta Oils' No. 3 Farbo, SE NE Section 2-37-4w, has spudded in and is reported drilling below 360 feet.

In reference to drilling on the Alberta end of the Red Coulee structure, a recent report by W. Calder, director of the Alberta provincial petroleum and natural gas branch, says as follows: "So far developments at Red Coulee have not been very extensive, but practically all of the wells drilled there to date have proven the existence of oil. Here again operators have unfortunately not been satisfied with small production which their wells showed and in their endeavor to increase the quantity several wells have drilled deeper and struck water, which has flooded and driven away the oil previously present. The consideration that the oil although only present in small quantities is ample to give a good return on capital invested makes it regrettable that operators cannot be satisfield to build up this and other fields from a small beginning."

British Columbia Test

In the Kelowna district, British Columbia, Okanangan Oil & Gas Co.'s No. 1, E half Section 2-26-Osoyoos Survey, is officially reported standing at 2,520 feet. The hole has been full of water for the past six months, but there is a continuous flow of oil coming to the top, and it is claimed that a fair commercial production is indicated. Some gas is present with the oil.

Ontario Drilling

In the Tilbury Field, Kent County, Ontario, Ralph Dawson's No. 3, S Lot 3, Concession 15, Tilbury East Township, was drilled to 1,328 feet, encountering water. It was plugged back and shot at 1,316 feet, developing 100,000 feet a day. Production will be taken by the Southern Ontario Gas Co.

In the Dawn Field, Lambton County, Dawn Oil & Gas Co. will drill its No. 2 almost due south of No. 1. No. 1, in Lot 25, Concession 9, Sombra Township, finished dry at 2,150 feet.

In Euphemia Township, Lambton Oil & Gas Syndicate's No. 2, Lot 27, Concession 9, finished dry at 415 feet. Location is being made for No. 3 fairly close to No. 1.

On Pelee Island, Essex County, Pelee Oil & Gas Co.'s No. 1, Theo Rinkel farm, is reported drilling below 75 feet.

CENTRAL WEST FIELDS

(Continued from Preceding Page)

to have produced an initial of 40 bbls. at 422 feet.

ILLINOIS

Only one completion was reported from the Illinois Fields, being Stifal and others' No. 1 in the northeast corner of the John B. Lawrence farm, NE Section 36, Casey Township, Clark County, which produced an initial of 2 bbls. at a depth of 483 feet.

H. V. Daugherty reports he is drilling a wildcat on the Albert Smith farm, south of Farmington, in Coles County, in the NE NE Section 21, Pleasant Grove Township. Had showing of gas at 75 feet, some oil and a larger gas showing at 180 feet, as well as more oil, and states the indications for a producer are better every day.

In Lawrence County, Dennison Township, the Ohio Oil Co. abandoned No. 7 Lydia Seed farm, SW Section 15. Foreman & Miller abandoned No. 1 Hattie E. Robinson farm, SE Section 15, Wabash Township, Wabash County.

In the Dupo Field, Sugar Loaf Township, St. Clair County, H. and M. Operating Co. abandoned Nos. 1 and 2 Fred Metter farm, SE Section 34, also pulled out Nos. 1, 2, 3 and 4 Pauline Eckert farm, SW Section 34, same township.

INDIANA

Indiana oil and gas news compiled by Paul F. Simpson, state gas supervisor, Department of Conservation, Division of Geology, by counties, follows:

Crawford County—Pfeiffer and others are again drilling the Arthur Beasley test in SE Section 32, Sterling Township.

Daviess County—No. 2 Alva C. Smith drilled by Amsler and Gilmore in the southeast corner of Section 4, Harrison Township, was completed with 1,000,000 feet of gas at 629 to 641 feet. Harry Hanson and others have started a gas test on the John S. Williams lease in SE Section 5, same township.

Dubois County—The Anton Hopf test by the Dubois Oil & Gas Co., in SE Section 7, Madison Township, was plugged at 1,100 feet. In the SE of Section 25, Harbison Township, the Ohio Oil Co. is starting a well on the David Neukam, Jr., farm.

Fountain County—The Fountain Oil & Gas Co. plugged its No. 1 Gantz in SE Section 28, Troy Township, after a shot in the Trenton failed to materially increase the showing. The rig was moved to the Snider and Mason farm, SW Section 2, Cain Township, where the Coats-Smith Oil Co. is starting another test.

Franklin County—The American Industrial Gas Corp. plugged the Johnnie Jinks test in SE Section 7, Laurel Township, after passing into the St. Peter formation.

Gibson County—No. 2 G. B. Allen, completed by the Wabash Public Service Corp. in NE Section 22, Columbia Township, was gauged at 6,600,000 feet of gas at 1,445-51 feet. A third well on the farm has been started. The Big Four Oil & Gas Co. completed the first well on the Robert Huey lease in SW Section 18, Washington Township, with an initial production of 200 bbls. natural at 1,233-66 feet. Same company has made a location for No. 1 Nora Hope in NE Section 10. In the same quarter section Nelson Brothers are starting No. 1 Mary B. Richardson. The Catherine Sloan is being drilled by Big Four Oil & Gas Co. in the SW Section 18.

Harrison County—Brooks J. Johnston plugged his test on the Charles Burkhart farm in NE Section 25, Jackson Township.

Knox County—The Knox Engineering Corp. has resumed drilling its Snapp well, location 252, Busseron Township. In location 290, same township, O. A. Thayer completed a wildcat oil well at 820 feet, with an initial production after the shot of 12 bbls. Further drilling in this area is expected.

Laporte County—No. 1 John Siddles, drilled by H. J. Hauck and others in Section 4, Lincoln Township, was plugged after a shot in the Trenton failed to increase the showing of oil.

Perry County—No. 1 James Cassidy, in Section 16, Anderson Township, is still drilling after finding the Jackson sand dry. No. 1 H. Cassidy, west of the Bristow Pool, in Clark Township, is reported a small oil well. Conyers and Bugg completed their Alvin Franchville in NW Section 30, Clark Township, with an estimated production of 75 bbls.

Ripley County—The Samuel W. Hull test in Section 21, Otter Creek Township, was abandoned and plugged by the American Industrial Gas Corp., after drilling to the St. Peter formation.

Spencer County—The Maxwell Petroleum Co. is drilling No. 1 Anna Hawk, SE Section 8, Ohio Township.

Sullivan County—Wyman and Brown are starting No. 1 William Bell, Jr., in NE Section 23, Turman Township. In Section 20, Curry Township, William H. Wood is drilling No. 1 Rose L. Marts.

Union County—The Harrison Lafuse test drilled by the American Industrial Corp. in NW Section 30, Harrison Township, was plugged after drilling to the top of the St. Peter formation.

Vigo County—Dr. C. C. Taliaferro is drilling No. 1 Cyrus L. Lane, northeast corner of Section 22, Prairie Creek Township.

KENTUCKY

Two exceptionally large shallow sand oil producers were reported in the western portion of Kentucky that may bring about additional drilling in Hart and Ohio Counties. The Hart County well was drilled by Archie Compton on the Robertson farm, in the Lagrande Field, with an initial output of better than 350 bbls., the other being drilled by Paul Goldberg and others, which is also a test on the Roy Owens farm, in the Barrett Hill area of Ohio County, and credited with an initial of 350 bbls. from the depth of 1,000 feet. There are offsets for several new wells to the two producers. Offsets are being planned by the Creek Drilling Co. and other operators holding acreage in the vicinity of the new producer on the Owens farm.

Another of the counties in the western part of the state is attracting attention, Grayson County, which lies to the west and northwest of Hart County, where oil and gas developments have assumed interesting proportions in the past few weeks, with three large concerns moving forward rapidly in their preparations to drill. Fred Ward, Owensboro, superintendent for the Ohio Oil Co. in Kentucky; W. C. Smith, C. R. Steinberger, A. R. Dowling, all of Owensboro and employes of the same company; R. E. Knipe and E. J. Gifel, from the office of the Ohio Oil Co. at Marshall, Ill., have been in the county working up information on a 10,000-acre block of leases owned by the company north of Leitchfield. Mr. Steinberger, geologist for the Ohio Oil Co., is preparing data on two different structures and drilling operations are expected to start soon.

G. E. Cornelius, Pittsburgh, Pa., who owns two large blocks of leases in southern Grayson County, started a well on the Pony White farm at Meredith, south of Leitchfield the past week. Miller Ross, of Bowling Green, Ky., who also has many acres in South Grayson County under lease, will start drilling operations on the Van Meter farm, west of Meredith.

The Columbia Petroleum Co., Owensboro, represented by W. M. Russell and W. W. Jemeson, is carrying on structure work east of Grayson Springs, which is east of Leichfield, the county seat of Grayson County. The same firm also owns a number of leases in the southeast part of Grayson County, where Edmonson and Hart join Grayson County. Frank Pringle and Richardson Brothers, Litchfield, have acquired three large blocks of leases and have a rig on the ground ready to start drilling at once. Other holders of leases in Grayson County, include Louisville Gas & Electric Co., Louisville; Rivers Oil & Gas Co., Horse Cave, as well as many small leasers. T. E. Bates of the Kentucky Gas Co., Owensboro, was in Grayson County the past week in the interest of his company which holds leases in the territory where a 500,000-foot gas well was brought in recently on the Shartzer farm, in the west edge of Leitchfield. This well is now owned by the Kentucky Public Service Co., which is selling its gas in Leitchfield. The Kentucky Public Service Co. is also owner of a gas well with a volume of 1,000,000 feet on the Seaton farm at Shrewsbury, 10 miles southwest of Leitchfield and in the southern part of Grayson County. The Seaton well got its gas in the Beaver sand, which was found to be 110 feet thick and similar to the sand found in the old Wayne County Field, one of the oldest producing counties in Kentucky. There is also a nice oil showing in this Seaton well.

Among the Wells

In Ohio County the B. B. Oil Co.'s No. 13 well, 1,000 feet from the south line and 500 feet from the east line of the J. E. Hendrix farm, a mile southeast of Panther Church, had an initial of 10 bbls. James C. Ellis' No. 3 well, 600 feet from the south line and 200 feet from the west line of the Cromer & Cromer farm, 3 miles southeast of Whitesville, reported good for 5 bbls.

In Daviess County, Ellis and Ashby's test on the E. R. Cooper farm in the Jones Pool, produced an initial of 125 bbls. from a depth of 620 feet. Frank Cox and others drilled a dry hole in No. 4 Charles Bell farm, in the Jones Pool, at a depth of 615 feet. Mida McMahan also found a dry hole in No. 3 in the northwest corner of the Robert Jones farm, same pool, at a depth of 620 feet. Huff Garrison and others' No. 1 in the northeast corner of the J. Richardson farm, one-half mile southwest of Crane Run, produced an initial of 12 bbls. Brenner & Adams' second test, 200 feet from the south line and 500 feet from the east line of the L. P. Williams farm, in the Cane Run Pool, did 40 bbls. initial, and Thrasher & Brewer's test in the southeast corner of the Paul Birch farm, a mile south of the town of Boston, pumped 8 bbls.

A gas well was reported completed on the Dr. M. E. Craft farm, near Crofton, in Christian County.

Cane Run Petroleum Co.'s test on the A. F. Bellamy 20 acres, near Deanfield, in Ohio County, developed a dry hole at a depth of 785 feet.

Hupp, French and others' test on the Ezra Chanceller farm, a mile south of Cane Run, in Daviess County, was a dry hole at a depth of 620 feet.

Chas. C. Taliaferro, Jr., according to report, has a fair gas well in a test on the Larkin Key farm, 1½ miles north of Bonneville, in the northwestern part of Hart County, at a depth of 330 feet.

SUMMARY OF STATEMENTS MADE MAY 10, 1932, RELATING TO BUSINESS OF VARIOUS PIPE LINES FOR MONTH ENDING APRIL 30, 1932

	Gross stocks	Runs from wells	Other receipts	Regular deliveries	Other deliveries
Nat. Transit	634,782.71	147,723.99	1,002,440.54	566,440.30	597,953.07
S. W. Pa. P. L.	453,240.11	69,759.24	768,023.38	447,522.55	286,145.71
Eureka P. L.	1,293,097.03	280,564.95	213,270.48	201,570.72	217,426.65
Buckeye P. L. (Macksburg)	285,565.79	248,423.27	117,147.90	272,180.88	148,798.08
Buckeye P. L. (Lima, etc.)	3,082,716.14	85,450.06	2,524,154.52	1,480,881.88	1,056,769.02
Buckeye P. L. (Cleveland)	30,490,73	11,868.52	190,147.33	1,468.37	197,378.96
Indiana P. L.	476,841.83	2,736.17	1,309,203.53	1,070,857.65	278,595.27
Southern P. L.	178,607.70	.....	12,000.59	35,585.52	35,811.87
Bradford Trans.	258,081.53	410,284.83	.....	439,477.38	.....
N. Y. Transit	134,159.11	37,613.87	134,081.64	191,340.50	.....
Northern Pipe	247,444.39	.....	507,710.24	158,940.28	331,410.08
Tide Water Pipe	940,092.95	22,997.64	.....	486,908.25	.....
Tuscarora Dev.	9,255.63	.....	.....	223,556.91	.....
Total April 30	8,074,475.70	1,317,422.53	6,778,180.15	5,570,631.09	3,150,288.71
Total March 31	7,932,495.78	1,229,541.85	6,545,950.92	5,436,780.68	3,295,473.21
Difference	141,979.92	87,880.68	232,229.23	133,850.41	145,184.50

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 55)

H. W. Perritt's No. 2 Brown Lbr. Co., 300 ft. N and W, from center Sec. 29-3-9 ..... S.D. 964 ft.
Texana Oil Co.'s No. 1 Clark-Morris Lbr. Co., 878 ft. N, 560 ft. E, C, Sec. 23-5-6 ..... Deepening old well 2,504 ft.

OUACHITA PARISH

Wilson & Mitchell's No. 1 Williams, Sec. 5-16-1e, 330 ft. E, 240 ft. S, NW cor. SW SE ..... Drlg. black shale 3,200 ft.

RED RIVER PARISH

C. F. Davis' No. 1 Pierson, 500 ft. S, 317 ft. E, NW cor. SW NW, Sec. 13-14-11 ..... Location.
Lawrence Decker, tr.'s No. 1 Madden, 1,650 ft. S and W, NE cor., Sec. 21-14-10 ..... Derrick.
La. Oil Dev. Co.'s No. 2 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 27-13-11 ..... Spudded and S.D. 50 ft.

RICHLAND PARISH

National Gas Co.'s No. 1 Singletary, 1,980 ft. N, 660 ft. W, SE cor., Sec. 20-18n-7e ..... S.D. 2,515 ft.

SABINE PARISH

J. H. Askew's No. 1 Sabine Lbr. Co., NE NE, Sec. 9-7-13. Rigging up.
R. W. Boulding's No. 1 Williams, Sec. 17-7-10, 200 ft. S and E, NW cor. SW NE ..... S.D. 500 ft.
J. M. Bridges' No. 1 Armstrong, 360 ft. N, 320 ft. E, SW cor. SE, Sec. 28-10-11 ..... Drlg. rock 3,206 ft.
Broderick & Calvert's No. 1 Costello, Sec. 2-7-14, 375 ft. S, 150 ft. W, NE cor. SE NW ..... S.D. 150 ft.
W. M. Coates' No. 1 Stille, 330 ft. N, 660 ft. W, SE cor., Sec. 35-8-13 ..... Derrick.
W. M. Coates' No. 1 Gray, 330 ft. N and W, SE cor. SW, Sec. 2-7-13 ..... Location.
W. M. Coates' No. 2 Gray, 330 ft. S and W, NE cor. SE SW, Sec. 2-7-13 ..... Location.
Coates Pet. Co.'s No. 2 Stille, 330 ft. N and E, SW cor. SE SW, Sec. 35-8-11 ..... Location.
Coates Pet. Co.'s No. 3 Stille, 330 ft. N and E, SW cor., Sec. 35-8-13 ..... Location.
Craig et al's No. 1 Travis, Sec. 13-7-11, 200 ft. S and E, NW cor. SE NW ..... Drlg. shale 1,720 ft.
R. E. Davidson's No. 1 Davis, 600 ft. S, 125 ft. E, NW cor., Sec. 28-7-11 ..... Derrick pattern.
B. A. Ferrell's No. 1 Haley, Sec. 6-7-12, 300 ft. S and E, NW cor. NW SW ..... S.D. 2,000 ft.
R. L. Gay, tr.'s No. 1-A Long Bell Lbr. Co., 420 ft. S, 200 ft. W, NE cor. NW NW, Sec. 10-8-13 ..... Coring lime and shale 5,323 ft.
R. L. Gay, tr.'s No. 11 Bowman-Hicks, 330 ft. N and W, SE cor. NE NE, Sec. 14-7-14 ..... Location.
J. I. Hall's No. 1 Williams, SE NW, Sec. 2-7-10 ..... Testing 2,331 ft.
Vick Hammond's No. 1 Esernack, SE cor. NW SW, Sec. 3-7-13 ..... Location.
D. Holcomb's No. 1 Petty, 330 ft. S and W, NE cor. SW SW, Sec. 12-7-11 ..... Set 6-in. 2,455 ft.
Howard et al's No. 1 Williams, 300 ft. N and E, SW cor. SE NW, Sec. 13-7-11 ..... Location.
G. E. Jordan's No. 1 Dew, 330 ft. N, 340 ft. E, SW cor. SW SE, Sec. 34-8-11 ..... Location.
J. J. Keen, tr.'s No. 1 Belton (no check), Sec. 31-9-12 ..... S.D.; W.O. 3,128 ft.
A. D. King, tr.'s No. 1 Davis, 170 ft. N, 410 ft. E, SW cor. NW NE, Sec. 29-7-11 ..... Location.
A. D. King, tr.'s No. 1 Germain, Sec. 7-7-10, 330 ft. E, 518 ft. N, SW cor. NE NE ..... S.D. for wtr. 1,630 ft.
A. D. King, tr.'s No. 1 T. L. Andries, 200 ft. S, 300 ft. E, NW cor. SE SE, Sec. 15-7-11 ..... Location.
A. D. King, tr.'s No. 1 J. J. Andries, 140 ft. S, 240 ft. W, NE cor. SE SW, Sec. 15-7-11 ..... Set 10-in. 101 ft; drlg. 420 ft.
M. J. Kissick's No. 1 Buvins, 570 ft. S, 14 ft. W, NE cor., Sec. 29-7-11 ..... Drlg. 2,180 ft.

W. F. Lacey's No. 3 McNeely, Sec. 14-7-11, 300 ft. S and E, NW cor. NE NE ..... Derrick.
Jack Lanier's No. 1 Petty, Sec. 11-7-11, 330 ft. N and W, SE cor. NE SE ..... W.O.S.R. 2,575 ft.
Geo. LeGrand's No. 1 McGough, Sec. 3-8-10 ..... Set 10-in. 100 ft.
Lowery & Greene's No. 1 Martinez, 330 ft. N and W, SE cor., Sec. 14-8-13 ..... Rigging up.
Mays et al's No. 1 Delong, Sec. 5-7-10, 275 ft. N, 175 ft. W, SE cor. SE SW ..... Derrick pattern.
Hill Myers' No. 1 Garcia, 200 ft. N and W, SE cor. SW NW, Sec. 4-7-13 ..... Rigging up.
E. F. Neely's No. 1 Cobb & Alford, Sec. 14-7-11, 200 ft. S, 100 ft. E, NW cor. NE SW ..... W.O.S.R. 2,485 ft.
E. F. Neely's No. 1 Rains, 660 ft. N, 100 ft. W, SE cor., SW NW, Sec. 14-7-11 ..... W.O. 2,541 ft.
C. D. Neff, tr.'s No. 1 Snell, Sec. 9-7-11, 350 ft. N, 660 ft. W, SE cor. Sec. ..... W.O.S.R. 2,509 ft.
C. D. Neff, tr.'s No. 1 Peterson, 200 ft. N and E, SW cor. NW NW, Sec. 36-8-13 ..... Derrick.
Palmer & Smitherman's No. 1 La. Long Leaf Lbr. Co., Sec. 12-7-11, 330 ft. S and E, NW cor. NE SE ..... Location.
Palmer & Smitherman's No. 2 La. Long Leaf Lbr. Co., 330 ft. S and W, NE cor. SE, Sec. 12-7-11 ..... Location.
Palmer & Smitherman's No. 3 La. Long Leaf Lbr. Co., 330 ft. S and W, NE cor. NE SW, Sec. 12-7-11 ..... S.D. 2,680 ft.
Pelican Nat. Gas Co.'s No. 8 Sabine Lbr. Co., 330 ft. S and W, NE cor. NE SW, Sec. 3-7½13 ..... Drlg. 2,078 ft.
H. W. Perritt's No. 1 Brown Lbr. Co., Sec. 6-7-10, 330 ft. N and E, SW cor. SW SE ..... Tested dry 2,763 ft; W.O.
Roy Raines et al's No. 1 Beard, 720 ft. E, 700 ft. N, SW cor. SW SE, Sec. 8-8-10 ..... Derrick pattern.
F. G. Reed et al's No. 1-A McNeely, 200 ft. N and E, SW cor. NW NE, Sec. 14-7-11 ..... W.O.S.R. 2,502 ft.
Sabine Prod. Co.'s No. 1 Sabine Lbr. Co., 330 ft. S and W, NE cor. NW SE, Sec. 3-7-13 ..... Set 6-in. 2,046 ft.
H. R. Smith et al's No. 1 La. Long Leaf Lbr. Co., Sec. 12-7-11, 330 ft. S and W, NE cor. NW SW ..... Location.
Southland Drlg. Co.'s No. 2 F. Martinez, Sec. 11-7-13, 330 ft. S and E, NW cor. NE NW ..... Derrick pattern.
Southland Drlg. Co.'s No. 1 Gilbert Martinez, Sec. 2-7-13, 330 ft. N and W, Sec. cor. SW SW ..... Derrick pattern.
Southland Drlg. Co.'s No. 1 Frost Lbr. Co., 330 ft. N and W, SE cor. NE NE, Sec. 13-9-11 ..... Set 12½-in. 103 ft.
State Prod. Co., Inc.'s No. 1 Davis, Sec. 17-7-10, 150 ft. N and E, SW cor. SW NW ..... Drlg. 1,376 ft.
State Prod. Co., Inc.'s No. 1-B Davis, 200 ft. N and E, SW cor., Sec. 17-7-10 ..... Derrick pattern.
A. F. Tarver's No. 3 Cutrer, Sec. 13-7-11, 1,120 ft. E, 300 ft. N, SW cor. NW ..... W.O.S.R. 2,600 ft.
The Texas Co.'s No. 2-B Grauque, Sec. 10-7-13, 1,700 ft. W, 330 ft. S, NE cor. Sec. ..... Dry and abd. 2,480 ft.
C. H. Tuttle's No. 2 Byrd, 133 ft. S, 134 ft. E, NW cor., Sec. 7-7-10 ..... Rigging up.
C. C. Walker's No. 1 Noble-Neely, 330 ft. S and E, NW cor. SW, Sec. 36-8-13 ..... Location.
Williams & Spiers' No. 1 Williams, Sec. 31-8-10, SE cor. SE SW ..... Derrick.

TENSAS PARISH

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ..... S.D. 3,545 ft.

WEBSTER PARISH

J. K. Wadley's No. 1 Matthews, Sec. 11-23-9, 130 ft. N, 330 ft. E, SW cor. SW NE ..... Coring 2,807 ft.

ARKANSAS

ASHLEY COUNTY

D. S. Brooks, Inc.'s No. 1 Crossett Lbr. Co., 320 ft. N and E, SW cor. SW SE, Sec. 31-15s-6w ..... S.D. for wtr. 3,170 ft.

COLUMBIA COUNTY

Kendall Oil Co.'s No. 1 Fullenwelder, Rhea & Kitchen, Sec. 13-17-22 ..... S.D. 814 ft.

CLAY COUNTY

S. C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C, NW SE, Sec. 4-20-3 ..... S.D. 1,350 ft.

CLEVELAND COUNTY

Crum & Stillwell's No. 1 E. R. Bell, Sec. 10-10s-12 ..... Rigged up and S.D.

CLEBURNE COUNTY
(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... S.D. 3,740 ft.

CRAWFORD COUNTY

Ozark Nat. Gas Co.'s No. 1 C. E. Jones, 660 ft. N, 372 ft. E, SW cor. SE SW, Sec. 32-9-31 ..... Drlg. sand 1,675 ft.

DALLAS COUNTY

J. H. James, tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S, 200 ft. E, NW cor. SE, Sec. 11-9-15 ..... Trying to pull stuck D.S. 2,575 ft.
Zepp O. & G. Co.'s No. 3 Hillman, Sec. 20-10-13, 180 ft. N, 450 ft. E, SW cor. NW NE ..... Location.

DREW COUNTY

Co-Operative Dev. Co.'s No. 1 Ogles, Sec. 35-15-5, 330 ft. S and E, NW cor. NE NW ..... S.D. 1,890 ft.

HOT SPRINGS COUNTY

Star Oil Co.'s No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 ..... S.D. 1,306 ft.

LINCOLN COUNTY

Lawrence Cook, tr.'s No. 1 McGhee Planting Co., 420 ft. S, 200 ft. W, NE cor. NE SW, Sec. 5-8-7 ..... S.D. 2,800 ft.

LITTLE RIVER COUNTY

Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 25-13-19 ..... Location.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... S.D.; W.O. 3,570 ft.

MILLER COUNTY

C. E. Litchfield's No. 1 Hervey, 525 ft. S, 350 ft. W, NE cor. NE NW, Sec. 2-15-26 ..... T.A. 2,885 ft.
Fitzwater et al's No. 1 Beck, Sec. 33-15-26 ..... Coring 2,780 ft. (corrected).
W. E. Noel et al's No. 1 Dickson hrs., 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-20-27 ..... D.S. stuck 2,600 ft.

OUACHITA COUNTY

Copenhaven et al's No. 2 Berg, C SE SE, Sec. 13-15-17 .. W.O.S.R. 2,208 ft.
McLean et al's No. 1 L. D. Neely, Sec. 23-15-16, 200 ft. N and W, SE cor. NE SW ..... S.D. 102 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14 ..... T.A. 2,909 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24 ..... S.D.; W.O. 1,020 ft.
E. R. Henderson's No. 1 W. B. East, 200 ft. S, 150 ft. W, NE cor., Sec. 13-9-23 ..... Skidding over; to drill new hole.

PRAIRIE COUNTY

Powell Creek O. & G. Co.'s No. 1 Kloss, NE SW, Sec. 3-4n-8w ..... Partly rigged up and S.D.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ..... S.D.; T.D. 1,436 ft.
Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-3n-29 ..... S.D. 1,860 ft.

SEVIER COUNTY

Tristate Oil Co.'s No. 1 Grimble, Sec. 34-8-22, S½ SW ... S.D. 950 ft.

ST. FRANCIS COUNTY

Field & Jones' No. 1 F. M. White, Sec. 1-4n-3e, SW cor. NW ..... S.D. 700 ft.

UNION COUNTY

Drillers Oil & Dev. Co.'s No. 1 Pickering, 220 ft. N, 663 ft. E, SW cor. NW NE, Sec. 1-17-16 ..... T.A. 2,134 ft.
H. H. Helms' No. 1 C. H. Murphy, NE cor. NW NE, Sec. 31-16-14 ..... S.D. 2,875 ft.
Pigeon Hill Oil Co.'s No. 1 Union Sawmill Co., 330 ft. S and W, NE cor. NW SW, Sec. 19-17-13 ..... Drlg. sand 2,806 ft.
Wilson & Chapman's No. 1 King, Sec. 3-18-13, 330 ft. N and E, SW cor. NE NE ..... Derrick.
Wilson & Chapman's No. 1-A D. Norman, 330 ft. S and E, NW cor. N½ NE SE, Sec. 3-18-13 ..... S.D. 1,678 ft.

WASHINGTON COUNTY
(Cable tools)

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... S.D. 1,795 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Lockett's No. 1 Falcon, Sec. 36-7-21 ..... S.D. 5,710 ft.

EAST TEXAS

BOWIE COUNTY

Logan & Elliott's No. 1 Smith, 9,600 ft. S, 2,500 ft. W, NE cor. Chas. Lewis Sur. ..... S.D. 4,595 ft.
Lanford et al's No. 1 W. W. Whybark, 200 ft. S, 200 ft. W, SW cor. J. H. Dyer Sur. ..... S.D. 1,792 ft.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur. ..... S.D. 3,000 ft.

CASS COUNTY

Davis & Pigg's No. 1 Roy Bryan, SW cor. Roy Bryan 88-ac. tr., Albert H. Lattimer Sur. ..... Arranging to resume drlg. 2,860 ft.
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur. ..... S.D. 4,390 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. .... S.D. 2,280 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. ..... S.D. 960 ft.

HARRISON COUNTY

Lloyd Oil Corp.'s No. 1 E. S. Timmons, 150 ft. from N line to 250 ft. from E line of 105-ac. tr., Findley Sur. ..... S.D. 4,195 ft.
Ryan Cons. Pet. Corp.'s No. 1 J. M. Fuhr, 1,300 ft. N of NW cor. T. J. Copelin Sur., 1,675 ft. SW at right angles to NW SE line of O'Neal Sur. ..... Derrick.
Triangle Drlg. Co.'s No. 1 Platt, 1,125 ft. W, 1,995 ft. N, SE cor. F. C. Barker Sur. ..... Location.

MARION COUNTY

Baunoch Dev. Co.'s No. 1 Miller, 725 ft. N, 1,470 ft. E, SW cor. H. Fulgram Sur. (was Gist, Claunch & Dodson) ..... T.A. 4,120 ft.
Geo. Hindeman et al's No. 1 F. V. Lindsey, 3,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur. ..... Arranging to resume drlg. 2,380 ft.

PANOLA COUNTY

Moses & Wallace's No. 1 Daniel, 600 ft. N and W lines, Mrs. Gerrell 100-ac. tr., SW cor. Isabel Hanks Sur... S.D. for D.S. 740 ft.
G. A. Davidson's No. 1 Latham, Wm. Rich Sur. ..... Dry and abd. 2,685 ft.
J. L. Nelson et al's No. 1 J. Williams, 300 ft. S, 700 ft. W, NE cor. Williams' 67-ac. tr. in James Hanks Sur. ..... S.D. 3,055 ft.

SHELBY COUNTY

E. L. Chapman's No. 2 Pickering Lbr. Co., 600 ft. N, 400 ft. E, SW cor. D. S. Height Sur. ..... Drlg. 1,548 ft.
Chapperell Oil Co.'s No. 2 Holt, Matthew Moore Sur. .... S.D. 3,951 ft.
Fuller & O'Brien Bros.' No. 1 Frost-Johnson Lbr. Co., 300 ft. S, 150 ft. W, NE cor. 168-ac. tr., Aaron Castleberry Sur. ..... S.D. 2,345 ft.
K. H. Francis' No. 1 John Mims, Mary Smith Sur. ..... Fishing 3,262 ft.
Henry Mauilding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 20-ac. tr., A. D. Fountain Sur. ..... S.D. 3,276 ft.
McRoby et al's No. 1 Windham, Wm. Leach Sur., on Windham 296-ac. tr. ..... Pulling 6⅝-in. csg. 3,393 ft.
Ridgeway et al's No. 1 Polley, Domingues Gonzales Sur., 3,180 ft. E of SW cor., 160 ft. N at right angles of Polley 457-ac. tr. ..... Drlg. 1,335 ft.
Sedberry et al's No. 1 Pickering Lbr. Co., 400 ft. N, 400 ft. E, SW cor. Jane Stoddard Sur. ..... Drlg. 1,402 ft.
C. H. Tautenhahn's No. 1 J. C. Bogard, 300 ft. S, 900 ft. E, NW cor. J. C. Bogard's 52-ac. tr., Thomas Baker Sur. ..... S.D. 20 ft.
Western World's No. 1 Foster, Billingsby-Jeremiah Bowlin Sur. ..... Drlg. 2,710 ft.
Wray & Dunbar's No. 1 C. A. Hayden, 600 ft. N and W SE cor. 152-ac. tr. in D. T. F. Yordt Sur. ..... S.D.; W.O. 1,534 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

CADDO PARISH—PINE ISLAND

Company, well, farm name, section and block— Remarks:
Calatex O. & G. Co.'s No. 1 Scott, Sec. 5-16-16, 1,320 ft. E, 300 ft. N, SW cor. ..... Reaming to bottom 2,625 ft.
Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15 ..... S.D. 2,275 ft.

OUACHITA PARISH

Carbon Con.'s No. 7 Guthrie, Sec. 50-20n-4e, 5,263 ft. N, 7,475 ft. W of cors. of Secs. 25, 26 and 49, in Sec. 50 ..... Location.

SABINE PARISH—ZWOLLE

O. J. Baird's No. 2 Duggan, Sec. 14-7-11, 200 ft. S and E from cen. Sec. ..... W.O.S.R. 2,509 ft.
Baird Bros.' No. 1 S. Martinez, 122 ft. E, 476 ft. S, NW cor. NE SW, Sec. 2-7-13 ..... Derrick.
W. M. Coates' No. 1 LaRoux, 330 ft. N and E, SW cor. SE, Sec. 36-8-13 ..... Location.
W. M. Coates' No. 1 Nulton, 224 ft. E, 330 ft. S, NW cor. SW NW, Sec. 1-7-13 ..... Derrick.
Crescent Drlg. Co.'s No. 4 Byrd, 200 ft. N and W, SE cor. NW NE, Sec. 12-7-11 ..... W.O.S.R. 2,521 ft.
Dengall O. & G. Co.'s No. 1 E. Nulton, 224 ft. E, 330 ft. N, SW cor. NW NW, Sec. 1-7-13 ..... 6-in. 2,066 ft; bailing 2,076 ft.
Dengall O. & G. Co.'s No. 1-F Nulton, 330 ft. S and E, NW cor. SW NW, Sec. 2-7-13 ..... Location.
Dengall O. & G. Co.'s No. 1-G Nulton, 350 ft. N, 330 ft. W, SE cor. NE NE, Sec. 2-7-13 ..... Set 6-in. 2,058 ft.
Depression Oil Co.'s No. 1 Peters, 355 ft. N, 340 ft. W, SE cor. SW SW, Sec. 11-7-11 ..... Set 6-in. 2,385 ft.
M. L. Friend's No. 1 Eisernack, 350 ft. N, 330 ft. W, SE cor. N½ NE NE, Sec. 2-7-13 ..... Drlg. 1,700 ft.
M. L. Friend's No. 1 Nulton, 300 ft. S and W, NE cor. SE NE, Sec. 2-7-13 ..... Drlg. 1,880 ft.
J. E. Grandstaff's No. 1 Johnson, S½ SW SW, Sec. 2-7-11. Set 10-in. 108 ft; S.D. 700 ft.
Lionel Hawkins' No. 2 Newton, 796 ft. N, 336 ft. E, SW cor. NE SE, Sec. 1-7-11 ..... Location.
Hudson & Bird's No. 1 Walden, 480 ft. N, 300 ft. E, SW cor. SW NE, Sec. 26-8-11 ..... Dry and abd. 2,696 ft.
Independent Oil Co.'s No. 1 Cobb, 200 ft. S and W, NE cor. NW SW, Sec. 14-7-11 ..... Location.
Zeke Lohman's No. 1 McCormick, 660 ft. E, 330 ft. N, SW cor. NE SW, Sec. 2-7-11 ..... S.D.; W.O. 2,680 ft.
Loring Oil Co.'s No. 18 Bowman-Hicks, 1,280 ft. S, 275 ft. E, NW cor. SW NW, Sec. 15-7-12 ..... Drlg. lime 5,020 ft.
Pelican Nat. Gas Co.'s No. 11 La. Long Leaf Lbr. Co., Sec. 10-7-11, 330 ft. N and W, SE cor. NE NW .... W.O.S.R. 2,593 ft.
Pelican Nat. Gas Co.'s No. 13 La. Long Leaf Lbr. Co., 330 ft. N and W, SE cor. NE SE, Sec. 9-7-11 ..... Set 6-in. 2,368 ft.
F. G. Reid's No. 1-B McNeely, 400 ft. S, 110 ft. W, NE cor. NE NW, Sec. 14-7-11 ..... Rigging up.
C. T. Ruffian's No. 1 Lilley, 300 ft. S and W, NE cor. NW, Sec. 8-7-11 ..... Set 10-in. 100 ft; drlg. 1,320 ft.
Sabine Prod. Co.'s No. 3 Pearce, Sec. 10-7-11, 330 ft. S and E, NW cor. SE NW ..... S.D.; W.O. 2,699 ft.
F. E. Stancil's No. 1 Pouder, 273 ft. S, 397 ft. E, NW cor. NE SE, Sec. 10-7-11 ..... Derrick pattern.
F. E. Stancil's No. 2 Pouder, 595 ft. N, 283 ft. E, SW cor. SE SE, Sec. 10-7-11 ..... Location.

UNION PARISH

Interstate Nat. Gas Co.'s No. 2 Steele, 1,980 ft. W, 660 ft. N, SE cor., Sec. 26-20-3e.....Rigging up.
Interstate Nat. Gas Co.'s No. 3 Steele, 660 ft. S and E, NW cor. NE, Sec. 26-20-3e.....Location.
Southern Carbon Co.'s No. 59 fee, 660 ft. N, SE SW cor. SE, Sec. 17-20-4e.....Set 6-in. 2,101 ft.

ARKANSAS

UNION COUNTY—EL DORADO

Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15 .....Coring broken lime 4,039 ft.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 1 Winn est., 330 ft. S and E, NE cor. 8½ NW, Sec. 11-18-13.....T.A. 3,586 ft.
Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13.....Location.
Wilson & Chapman's No. 1-B Hadley, Sec. 3-18-13, 330 ft. S and W, NE cor. SE NW.....T.A. 3,545 ft.
Wilson & Chapman's No. 3 Emily King, Sec. 3-18-13, 150 ft. S, 150 ft. E, NW cor. NE NE.....S.D. 1,730 ft.

EAST TEXAS

PANOLA COUNTY

Daisy O. & G. Co.'s No. 1 Rucks, John Palmer Sur. .....S.D. 3,376 ft.
United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lse., in B. C. Jordan Sur. ....Location.

MISSISSIPPI

HINDS COUNTY

McGuire et al's No. 1 Spring Lake, Sec. 11-5n-1e, 250 ft. N, 450 ft. W, from center of Sec. .....Testing 2,435 ft.

RANKIN COUNTY

Meredith & Smith's No. 2 Strawder, Sec. 12-5n-1e, 2,-552 ft. W, 300 ft. N, SE cor. NE.....Comp. estimated 4,500,000 ft. gas 2,374 ft.
Meredith-Smith et al's No. 3 Strawder, 400 ft. S, 750 ft. W, NE cor., Sec. 12-5n-1e.....Derrick pattern.
Owen & Weaver's No. 1 Fitzhugh, 1,740 ft. E, 225 ft. N, SW cor., Sec. 1-5n-1e.....Set 6⅝-in. 2,374 ft.

WILDCAT OPERATIONS IN MISSISSIPPI

CLARKE COUNTY

Company, well, farm name, section and block—	Remarks:
F. X. Gowans et al's No. 1 Elfring, SE NE, Sec. 13-1n-14e.	Rigging up.

HINDS COUNTY

Atkins et al's No. 1 Crane Lawrence, Sec. 23-6n-1e, 300 ft. E, 132 ft. N, SW cor. NE SE.....Drlg. 1,400 ft.
Miss.-Minn. Oil Co.'s No. 1 Edwards Land Co., Sec. 23-6n-4w, 1,200 ft. N and E from center of Sec. .....Reaming 2,920 ft.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keyes, C NW NE, Sec. 2-12-9 .....T.A. 3,403 ft.

LAMAR COUNTY

Stauffer & Kouri's No. 1 Bond, SE NE, Sec. 18-2n-14w..Drlg. plug 1,067 ft; T.D. 1,090 ft.

LOWNDES COUNTY

Lowndes County Oil & Dev. Co.'s No. 1 Carr est., Sec. 34-17-16e, 1,320 ft. E, 330 ft. S, NW cor. Sec. .....Rigging up.

NEWTON COUNTY

Bob Dalton's No. 1 Majure, 400 ft. N, 300 ft. E, SW cor. SE, Sec. 25-8n-11e.....S.D. 840 ft.

NOXUBEE COUNTY

Thompson & Donohue's No. 1 Donohue, Sec. 25-16n-17e..S.D. 1,735 ft.

RANKIN COUNTY

Majestic O. & G. Co.'s No. 1 Elton Lbr. Co., Sec. 10-4n-3e.Derrick.
Orr et al's No. 1 Hanna, Sec. 14-5n-1e, 500 ft. E. 250 ft. S, NW cor. SW.....S.D. for casing 2,472 ft.

SCOTT COUNTY

M. U. Culley et al's No. 1 Owens, Sec. 2-8-9.....S.D. 190 ft.

SHARKEY COUNTY

United Gas Public Service Co.'s No. 1 Lenhart, Sec. 14-14n-6w, 660 ft. N of CSL of Sec. .....Drlg. 3,758 ft.

WARREN COUNTY

Eagle Bend O. & G. Co.'s No. 1 Kiger, SW cor. SW SE, Sec. 9-18-2 .....S.D. 2,607 ft.

WILDCAT OPERATIONS IN ALABAMA

CLARKE COUNTY

Company, well, farm name, section and block—	Remarks:
Tidal Oil Co. et al's No. 1 Hobson, Sec. 33-6n-3e.	Drlg. red shale 2,100 ft.

LAMAR COUNTY

Vernon O. & G. Corp.'s No. 1 Gardner, NW NW, Sec. 23-15s-16w .....Drlg. 1,465 ft.

WASHINGTON COUNTY

South Alabama O. & G. Co.'s No. 1 Wilson, Sec. 26-7n-1w.Rigging up.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 66)

Gatlin Oil Co.'s No. 11 I. A. Beck, 700 ft. from SE line, 156 ft. from SW line of tr. in J. Montes Sur. ..T.D. 702 ft.; comp. 8 bbls.
W. K. Oil & Gas Co.'s No. 4 Strunk, 300 ft. E of No. 3 Strunk .....T.D. 705 ft.; comp. 10 bbls.

GAS RIDGE—BEXAR COUNTY

American Gas Co.'s No. 5 W. H. Kennon, 1,750 ft. from S line, 2,000 ft. from E line of 400-acre tract in Maria F. Rodriges Sur. .....T.D. 2,110 ft.; drlg.

DUNLOP FIELD—CALDWELL COUNTY

Empire Gas & Fuel Co.'s No. 1 Walker, direct S offset to Bob Rose's No. 1 Pierce in Solomon Seal Sur. .....Rigging up.

WEBSTER POOL—CALDWELL COUNTY

C. J. Webster Oil & Gas Co.'s No. 1 C. F. Robertson, 700 ft. from E line, 200 ft. from N line of 100-ac. tract, John A. Neill Sur. .....Building derrick.

COLE POOL—DUVAL COUNTY

Cole Pet. Co.'s No. 75 Benavides, 365 ft. from NE line, 150 ft. from NW line, Blk. 8, Sec. 13, Mariana Arispe grant .....T.D. 5,175 ft.; coring.
Co-operative Drilling Co.'s No. 5 John Dinn, 264 ft. from N line, 150 ft. from W line of Blk. 5, Sur. 454..T.D. 1,635 ft.; drlg.

GOVERNMENT WELLS—DUVAL COUNTY

Duval Oil Corp.'s No. 9 Bishop Cattle Co., 2,216 ft. to W line, 2,231 ft. to N line of Sur. No. 135 .....T.D. 2,379 ft.; set csg.
Humble Oil & Refining Co.'s No. 4 White, 2,310 ft. from S line, 1,320 ft. from W line of Sur. 58 .....Location.
Humble Oil & Ref. Co.'s No. 5 Paul White, 1,980 ft. from W line, 990 ft. from S line of Sur. 58 .....Derrick.

SARNOSA FIELD—DUVAL COUNTY

John F. Camp's No. 2 Weil, 1,300 ft. N, 13 deg. W of No. 1 Weil in Sur. No. 570 .....Building derrick.
The Texas Co.'s No. 1 Ruiz, 150 ft. from NE and NW lines of Sur. No. 127 .....Location.
Sun Oil Co.'s No. 1 Cano, 200 ft. from NW and NE lines of SE half of Sur No. 576 .....Location.

SLICK POOL—GOLIAD COUNTY

T. B. Slick estate's No. 2 Allen, 1,650 ft. from NE line, 330 ft. from NW line of tr. in Obid Marshall Sur. . T.D. 4,211 ft.; pulling liner to deepen.

DARST CREEK—GUADALUPE COUNTY

Humble Oil & Ref. Co.'s No. 4 Dan Denman, 500 ft. W of SW cor. of John F. Camp's 50-ac. lease, 150 ft. S of road, Wm. Arrington Sur. .....T.D. 2,355 ft.; set csg.
Humble Oil & Ref. Co.'s No. 5-C Sue Denman, 525 ft. from E line, 600 ft. N of No. 4-C, Wm. Arrington Sur. .....Derrick.
Sun Oil Co.'s No. 2 Dowdy, 500 ft. from N line of tract 700 ft. from W line of tract and survey in Jacob C Darst Sur. .....Location.
Sun Oil Co.'s No. 2 Dowdy, 500 ft. to N line of lease, 700 ft. to W line or Sur. .....Location.

JACOB POOL McMULLEN COUNTY

Jacob, Buzzini & Pickett's No. 3-A Jacob, 740 ft. N, 75 deg. W of No. 2-A Jacob .....T.D. 960 ft.; set csg.
Jacob, Buzzini & Pickett's No. 1-B Jacob, Sec. 15 G.H.&H. Ry. Sur. .....Moving in rig.
Jacob, Buzzini & Pickett's No. 1-C Jacob, Sec. 47, J. Pointevant Sur. .....Location.
Longhorn Oil Co. and American Gas Co.'s No. 1 Lark, 2,790 ft. from N line, 1,150 ft. from W line of Lark tract, E. W. B. Scrugham Sur. .....Moving in.

ADAMS FIELD—MEDINA COUNTY

Yantis Oil Co.'s No. 1 Adams, 420 ft. from S line, 2,000 ft. from W line of F. Mumme Sur. .....Location.
Yantis and others' No. 1 Adams, 420 ft. from S line, 2,000 ft. from W line of F. Mumme Sur. .....Location.

CAMP-STANOLIND—NUECES COUNTY

John F. Camp and Stanolind Oil & Gas Co.'s No. 2 King, 660 ft. from S and E lines of Sec. 23 of King Subd...Location.

KING FIELD—NUECES COUNTY

John F. Camp's No. 2 King, 660 ft. from S and E lines of Sec. 23 of Richard King Subd. .....Rigging up.

SAXET FIELD—NUECES COUNTY

Gulf Coast Oil Co.'s No. 1 Perkins and LeGasse, 330 ft. from N and E lines of 245-ac. tr., Sec. 26, Shepard Subd. .....T.D. 4,566 ft.; wild gasser.
Gulf Coast Oil Co.'s No. 1 Bessie Elder, offset to No. 1 Perkins & Gasse, a wild gasser .....Building derrick.
V. B. Hillegeist's No. 1 McGregor, 150 ft. from W line, 330 ft. from S line of Sec. 311 .....Spudded in.
Rutherford Drlg. Co.'s No. 1 Hunter, 150 ft. from S and W lines of 10-ac. tr. .....T.D. 4,807 ft.; set csg.
Saxet Oil Co.'s No. 5 Weil, 3,041 ft. to N line, 333 ft. to W line .....T.D. 2,500 ft.; standing.
Tule Lake Oil Co.'s No. 1 Hocker & Sevier, 200 ft. from E line, 150 ft. from S line of tract .....T.D. 4,074 ft.; set csg.

WHITE POINT—SAN PATRICIO COUNTY

United Prod. Co.'s No. 3 Cage .....T.D. 4,925 ft.; drlg.

LOS OLMOS POOL—STARR COUNTY

Allison & Roberts' No. 1 Kelsey Bass in Sec. 6, Subd. of Porciones 75, 76, 77 .....Location.
Bennett O. & G. Co.'s No. 1 Seabury et al, Porcion 75....Moving in.
H. H. Davis' No. 6 Kelsey Bass, 20 ft. from E line, 600 ft. from N line of SW NW Section 6, Subd. of Porciones 75, 76, 77 .....Spudded in.
Day & Co.'s No. 1 Kelsey Bass, 150 ft. from S line, 400 ft. from W line of W 20 acres of NE NW of Sec. 6, Subd. of Porcions 75, 76, 77 .....T.D. 283 ft.; drlg.
Felder, Mitchell & Barnsley's No. 1 Kelsey-Bass, in Sur. 8, Subd. of Porcions 75, 76 and 77 .....T.D. 320 ft.; standing.
Griffin et al's No. 1 Bass, 150 ft. from N and W lines of NW NW Sur. 11, Subd. Porcions 75, 76, 77 .....T.D. 1,200 ft.; drlg.
Hooks & Weaver's No. 6 Kelsey Bass, 150 ft. from N and E lines of NE SW Sec. 6, Subd. of Porcions 75, 76, 77 .....T.D. 468 ft.; set csg.
M. A. Landrum's No. 2 Kelsey-Bass, 510 ft. from S line, 150 ft. from E line of Sur. 6, Porcions 75, 76 and 77 .....Location.
M. A. Landrum's No. 1 A. K. Bass, Sec. 6, 150 ft. to S and E lines of lease .....Location.
Los Olmos Oil & Gas Co.'s No. 13 Kelsey Bass, 500 ft. from W line, 150 ft. from S line of NW NW Sur. 7, Porciones 75, 76, 77 .....Location.
Tom C. Patton's No. 1 Kelsey-Bass, 150 ft. to W line, 150 ft. to S line of 20-ac. tract in NW NE of Subd. 8 of Porcions 75, 76 and 77 .....T.D. 1,050 ft.; standing.
R. H. Pursley's No. 2 Seabury et al, 650 ft. from S line, 150 ft. from E line of Pursley 80-acre lease in Share 5 of Partition of Porcion 75 .....T.D. 556 ft.; set csg.
Quien Sabe Oil Co.'s No. 1 Kelsey Bass, 300 ft. from N line, 750 ft. from W line of NE SW Section 8, Porciones 75, 76, 77 .....Location.
Rio O. & G. Co.'s No. 3 Kelsey-Bass, No. 6 Subd., Porcions 75, 76 and 77 .....T.D. 569 ft.; standing.
Sinclair & Rutherford's No. 1 Kelsey Bass, 150 ft. from S and W lines of SE NW Sec. 6, Subd. of Porcions 75, 76, 77 .....Rigging up.

RIO GRANDE CITY POOL—STARR COUNTY

Brady Drilling Co.'s No. 1 Rio Grande City, in center of city Plaza .....Location.
Coastal Oil & Gas Co.'s No. 1 Olivarez, 150 ft. from NE and SE lines of easternmost corner of Share 35, Porcion 80, Camargo .....Derrick.
Gulf Coast Oil Co.'s No. 1 Perez, 150 ft. from N and E lines of Share 16-C, Porcion 80, Camargo .....Derrick.
R. A. Hoffman's No. 1 Goodrich, 150 ft. from N and W lines of Blk. 6, Tract 5, Porcion No. 81 .....Spudded in.
R. E. Johnson's No. 1 Seabury, 150 ft. from S and W lines of Share 32, Porcion 80, Jurisdiction of Camargo.T.D. 1,410 ft.; drlg.
Edwin M. Jones' No. 1 Chatfield, 200 ft. from N and E lines of N half of Blk. 3, Tract 21, Porcion 80, Camargo .....T.D. 1,439 ft.; drlg.
King Pin Oil Co.'s No. 1 T. C. Lewis, 207 ft. from E line, 111 ft. from S line of Share 22, Porcion 80, Jurisdiction of Camargo .....Derrick.
R. H. Pursley's No. 1 San Juan Plaza, cen. of Blk. 96, Rio Grande City .....Location.
Sioux Oil Co.'s No. 2 Goodrich, 150 ft. from W line, 200 ft. from S line of Blk. 1, Tract 5, Porcion 80, Camargo.Spudded in.

WEST COLE POOL—WEBB COUNTY

French Oil Corp.'s No. 4-A Benavides, 2,640 ft. from N line, 150 ft. from W line of Sur. 659 .....T.D. 2,334 ft.; set csg.
Magnolia Petroleum Co.'s No. 2-F Benavides, 200 ft. from N line, 150 ft. from E line of S half of Sur. 659 .....Rigging up.

CHAPMAN POOL—WILLIAMSON COUNTY

Westbrook Oil Co.'s No. 8-B Lawrence, 340 ft. NE of No. 7-B, and 150 ft. from SE line of 27-ac. tr. in S. Miller Sur. .....Location.
R. A. Westbrook's No. 9 Simmons, 550 ft. along SE line of J. J. Sides' 10-ac. tr. ,from SW cor., thence 260 ft. SW at right angles and between Nos. 7 and 8 .....Location.
Westbrook Oil Co.'s No. 9-B Lawrence, 340 ft. NE of No. 8-B and 150 ft. from SE line of 27-ac. tr. in S. Miller Sur. .....Location.

ESCOBAS POOL—ZAPATA COUNTY

Allied O. & G. Co.'s No. 23 Gutierrez, 550 ft. from SE line, 1,765 ft. from NE line of Share 4, Comitas grant .....T.D. 1,481 ft.; comp. 150 bbls.
Allied Oil & Gas Co.'s No. 24 Gutierrez, 750 ft. from SE line, 1,478 ft. from NE line of Share 4, Comitas grant. Rigging up.
E. K. Bateman's No. 1 M. Garza Estate, 150 ft. to NE and SE lines of Douglas Subd. of Comitas grant .....Set surface csg.
E. R. Black & Paul S. Williams' No. 1 Comitas grant, 150 ft. from NW and NE lines of Blk. 100 .....Derrick.
F. M. Blair & Son's No. 1 Montemayor, 450 ft. to N, 150 ft. to E line of Blk. No. 1, Sur. 63 .....T.D. 1,408 ft.; standing.

O. W. Killam's No. 7 Medina, 524 ft. from NW line, 824 ft. from NE line of Share 34, Comitas grant...T.D. 1,410 ft.; comp. 100 bbls.
McGinley Corp.'s No. 2 G. T. Montemayor, 150 ft. from S and E lines of Blk. 2, Sur. 64 .....T.D. 1,744 ft.; testing.
McGinley Corp.'s No. 1 Jose Bustamente, 1,200 ft. to NE line, 150 ft. to NW line of 105.7-acre Henne, Winch & Fariss tract, Share 35, Comitas grant .....T.D. 1,613 ft.; drlg.
McGinley Oil Corp., No. 1 G. T. Montemayor, 150 ft. from N and W lines of Blk. 6, Sur. 64 .....Location.
S.R.C. Oil Co.'s No. 10-D Montemayor, 150 ft. from SW line, 987 ft. from N line of Blk. 9, Sur. 64 .....Spudded in.
The Texas Co.'s No. 8 Measles, 16,757 ft. from W line, 150 ft. from SE line of Cerrito Blanco grant .....Rigging up.

CHARCO REDONDO POOL—ZAPATA COUNTY

Bob & Richey's No. 29 Martinez, 810 ft. from SW line, 360 ft. from SE line of Blk. 24, W. R. Duke Subd., Charco Redondo grant .....Location.
Winsor Oil Co.'s No. 1 Martinez, in NE of Blk. 15, of W. R. Duke Subd., Charco Redondo grant .....Location.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

Week Ending May 21

ATASCOSA COUNTY

Company, farm and location— Remarks:

American Central Oil Co.'s No. 2 Mary McConnell, 150 ft. W of E line, 300 ft. S of No. 1, Blk. 138, W. C. M. Baker Sur., 3 miles W and 6 miles S from Somerset..T.D. 1,660 ft.; standing.
Glen Mathis' No. 2 Mrs. C. Martin, 100 ft. SE of No. 1...T.D. 3,240 ft.; drlg.

BASTROP COUNTY

I. L. Champion's No. 1 Owens, 500 ft. to SE line, 600 ft. to SW line of 628-ac. tract, Isaac Cosner Sur.....T.D. 1,400 ft.; drlg.
Lonnie Evans and Dan Auld's No. 1 D. J. Orgain, 2,100 ft. from NW line, 2,775 ft. from SW line of Addison Littleton League .....T.D. 1,668 ft.; drlg.
E. R. Marta and W. J. Beavens' No. 1 R. L. Carter, 450 ft. from NE line, 150 ft. from NW line of 100-ac. tract in George J. Glasscock Sur. .....T.D. 2,275 ft.; standing

BEE COUNTY

Humble O. & R. Co.'s No. 1 Laura Thompson, 6,360 ft. from N line, 15,100 ft. from W line of tract in Garrett Roache Sur., S part of county .....T.D. 5,560 ft.; drlg.
J. L. Mauldin's No. 1 Kimball, 300 ft. NE of Grayburg Oil Co.'s No. 1-A Kimball in S. Winship Sur. .....Location.
C. F. Nichols' No. 1 J. P. Harris, Durango grant east of Tuleta .....T.D. 100 ft.; drlg.
The Texas Co.'s No. 1 Scott, E of Normanna Field, 500 ft. N and W lines of lease in Jose Maria Uranga grant .....T.D. 2,210 ft.; drlg.
Texas Gulf Producing Co.'s No. 1 Webb Hearn, 1,000 ft. N, 43 degrees E, thence 300 ft. NW at right angles from Huriburt's No. 1 Wood in P. T. Irrigation Co. Sur. .....T.D. 3,175 ft.; drlg.

BELL COUNTY

J. W. Riley's No. 1 W. S. Chaffin, in M. Griffin Sur.....T.D. 450 ft.; S.D.

BEXAR COUNTY

Amsden-Ingersoll-Miller's No. 1 Strumberg, 450 ft. to W line, 1,020 ft. to N line of tract, 12 miles SW of San Antonio .....T.D. 810 ft.; S.D.
Lloyd Bender's No. 1 Suburban Irrig. Farms, 800 ft. No. of cen. of N line of K. K. Herring tract, 1 mile E of Kirk .....¼.....T.D. 1,390 ft.; set csg.
S. W. Blount's No. 1-A S. A. Land & Dev. Co., 10 ft. from No. 1 in I. Perez Sur. .....T.D. 770 ft.; drlg.
Eckert et al's No. 1 Edwards, 150 ft. to N and W lines of farm in Martinez Sur. .....T.D. 1,490 ft.; standing.
Jones & Voltz' No. 1 Bonkowsky, 150 ft. to N and W lines of William McMenenes Sur., 13 miles E of San Antonio .....T.D. 907 ft.; standing.
Moore-Jauer's No. 1 Holly R. Ellison, 2,916 ft. from E line, 1,500 ft. from S line of farm in T. York Sur...T.D. 2,170 ft.; whipstocking.
Dr. Ewell Neil's No. 1 J. Watson, 500 ft. from W line, 1,700 ft. from S line of B. Martinez Sur. .....T.D. 2,495 ft.; in Edwards, dry.
Schneider, Rees et al's No. 2 Claussen, 12 miles NE of San Antonio .....T.D. 1,330 ft.; S.D.

BROOKS COUNTY

Allen & Morris' No. 1 Lasater, NW part of county, 450 ft. to NE line, 7,325 ft. to SE line of 962-ac. tract...T.D. 1,819 ft.; abnd.; hole junked, skidding rig.
Allen & Morris' No. 1-A Holbien-Wormser, skidded rig a few feet from No. 1 .....Rigging up.
Ed East's No. 1 A. Garcia, 600 ft. from N and E lines of 2,168-ac. tract in SW part of county .....T.D. 85 ft.; set surface csg.
F. G. Stearns' No. 1 Mrs. B. Myrick, 610 ft. W, 150 ft. S of NE cor. of Lot 2, Blk. 2, Falfurrias Farm and Garden tracts 2 miles N of Falfurrias .....Spudded in.

CALDWELL COUNTY

George Sullivan and Shell Petroleum Corp.'s No. 1 Plinsoll, 2,800 ft. to SW line, 300 ft. to NW line of tract and survey in M. Dennis Sur. .....Bldg. derrick.
Kistler, Stivers & Hendrick's No. 1 D. Carter, 400 ft. from NW line of Sur., 300 ft. NE of Creek in I. Allen Sur. .....T.D. 1,485 ft.; standing in chalk.
M. O. Rayor's No. 1 Kruez Bros., 450 ft. N, 150 ft. W of SW cor. of J. P. McCarley Sur. in Samuel Shupe Sur. .....T.D. 2,784 ft.; abnd. dry.
Taylor Oil Co.'s No. 1 McBride, 12 miles NE Luling .....T.D. 1,400 ft.; drlg.

COLORADO COUNTY

Coyle-Concord Oil Co.'s No. 1 Stewart Nelson in L.&G.N. Sur. No. 43 .....T.D. 670 ft.; set surface csg.

DE WITT COUNTY

Pat Armstrong's No. 1 E. T. Clark, 2,000 ft. S of Simms-Republic's No. 1 Clark in Jose Santos Sur.....Moving in.
J. F. Richardson's No. 1 Virginia Taylor, 330 ft. from SE line of tract, 330 ft. NE of Minnehuilla Creek....Location.
The Texas Co.'s No. 1 John McCrabb, 4,000 ft. from SW line, 1,435 ft. from SE line of 794-ac. lease in James Quinn Sur. .....Rigging up.

DUVAL COUNTY

Aztec Oil & Royalty Co.'s No. 1 Duval County Ranch Co., 750 ft. from E line, 300 ft. from N line of S 160 ac. of Sur. 322 .....Derrick.
Frank Gravis et al's No. 2 Schallert, 425 ft. to E line, 150 ft. to S line of Blk. 10, Cain & Smith Subd. "A", Sur. No. 356 .....T.D. 1,610 ft.; abnd., dry.
Hynes and Nessly's No. 1 Duval Ranch Co., 200 ft. from S and E lines of Blk. 26, Sur. No. 196 .....T.D. 2,550 ft.; drlg.
O. W. Killam's No. 1 Peters, 150 ft. from E line, 450 ft. from N line of SE of Sur. No. 1 .....T.D. 2,725 ft.; standing.
Plymouth Oil Co.'s No. 1 Parr, 6,250 ft. from W line, 1,925 ft. from S line of San Andres, Garcia grant ...Rigging up.
Suttle et al's No. 1 Bennett, 150 ft. from N and E lines of Sur. No. 44 .....T.D. 2,329 ft.; set csg.
The Texas Co.'s No. 1 Peters, 2,330 ft. from N and W lines of Sur. 162 .....Location.
The Texas Company's No. 1 Peters, 150 ft. from N and W lines of Sur. 162 .....Location.
Trinity Drillers, Inc.'s No. 1 Hagist, 3,892 ft. from W line, 4,400 ft. from S line of Sur. 122 .....T.D. 2,540 ft.; abnd.

GUADALUPE COUNTY

J. E. Clark's No. 1 R. Drummer, 600 ft. from SE line, 150 ft. from SW line of tract in Francisco Caravajal Sur. No. 47 .....Location.
Sal-Mar Oil Co.'s No. 1 Junker, 450 ft. from W line, 170 ft. from S line of lease in L. Bollinger Sur. ....Moving in.
Taylor Oil Co.'s No. 1 Pearson, S of Kingsbury.....Spudded in.
Sal Mar Oil Corp.'s No. 1 F. A. Pfullman, 150 ft. from W line, 1,650 ft. from N line of tract in Lewis Bollinger Sur. .....T.D. 2,430 ft.; abnd.

GOLIAD COUNTY

Hoffman & Gooch's No. 1 Fromme, 600 ft. from N and 1,200 ft. from W line of Peter B. Dexter Sur. .....T.D. 2,470 ft.; standing.
Humble Oil & Ref. Co.'s No. 1 Fromme, 450 ft. from S line, 150 ft. from W line of lease on Geo. Kersey Sur..T.D. 2,300 ft.; drlg.
Plymouth Oil Co.'s No. 2 Parks, 400 ft. S of No. 1 Parks in Solomon Parks Sur. .....T.D. 4,945 ft.; drlg
Neal et al's No. 1 J. M. Pettus, 10,700 ft. to S line, 2,500 ft. to E line of Pedro Trevino Sur. .....T.D. 4,565 ft.; standing.

GONZALES COUNTY

Crowder Oil Co.'s No. 1 Preston, 1,000 ft. from W line, 2,000 ft. from N line of W. W. Pace Sur. .....T.D. 200 ft.; standing.
Edmiston & Kirby Petroleum Co.'s No. 1 J. W. Ward, Jr., 200 ft. from N and W lines of tract in Dan McKay Sur. .....T.D. 1,529 ft.; S.D
Johnson & Mattock's No. 1 J. James, 13 miles NE of Gonzales city, 900 varas from E line, 300 ft. from S line of tract in M. A. Williams Sur. .....T.D. 2,300 ft.; reaming.
Nassamer, Gordon & Waldrop's No. 1 B. Botts, 2,500 ft. from E line, 650 ft. from S line in Sec. 6, Blk. 56, Gonzales Sur. .....T.D. 950 ft.; abnd.

HIDALGO COUNTY

Barrett-Kanellos' No. 1 J. B. Brock, 7 miles W and N from Mission (on Monte Cristo road) .....TD. 4,360 ft.; drlg.
San Roman Oil Co.'s No. 1 J. T. Lomax, 7,500 ft. from S and E lines of San Roman Sur. .....T.D. 2,500 ft.; S.D.
Dayle L. Smith's No. 3 Daskam, SW part of county.....T.D. 1,510 ft.; no report.

JIM HOGG COUNTY

Borah, Allen & Co.'s No. 1 E. Guerra, 150 ft. to S and W lines of Blk. 6, Sur. 86 .....T.D. 1,615 ft.; drlg.
Clark & Cowden's No. 1 E. Vela, Share 1 El Peyote grant.Rigging up.
D. C. DeWitt's No. 1 Gomez, 1,170 ft. from N line, 150 ft. from W line of Sur. No. 12, SW part of county ..T.D. 1,280 ft.; no report.
Duval Oil Co.'s No. 1 W. W. Jones, 1,020 ft. from S and W lines of 160-ac. tract in Holden Subd. of Share 5-A in San Diego Hinajosa grant .....Location.
T. P. Morgan's No. 1 fee, 2,223 ft. to N line, 1,640 ft. to E line of Share 19, Palo Blanco grant .....T.D. 4,207 ft.; abnd. dry.

JIM WELLS COUNTY

F. A. Lain's No. 1 Vernon Porter, 800 ft. from S line, 400 ft. from W line of 200-ac. tract in Sur. 25 .....Derrick blown down.
S. J. Sloane's No. 1 W. Wade, 150 ft. SW of cen. of NE line of Lot 6, Blk. C of Wade ranch, C. Blanca Sur...Spudded in.

KARNES COUNTY

A. E. Edmiston's No. 1 O. L. Cochran, 150 ft. from S line, 500 ft. from E line of farm in D. B. McConnell Sur. .....T.D. 1,820 ft.; standing.
Nichols Oil Co.'s No. 1 Newberry, 210 ft. S, 60 de. E from Fort Bend Oil Co.'s No. 1 Newberry .....T.D. 3,300 ft.; S.D.
Pickett et al's No. 1 D. E. Lyons in Victor Blanco Sur.....Spudded in.

KERR COUNTY

Eastland Oil Co.'s No. 1 Love, 600 ft. E of No. 1 Love in J. Martinez Sur. No. 1,594 ..... Rigged up.
Evans & Gant's No. 1 E. Young, A. E. Burg Sur. 28....T.D. 1,312 ft.; standing.
Verde O. & G. Co.'s No. 1 J. D. Witt, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 1,923, Hamilton Sur., 4 miles from Center Point; T.D. 200 ft; carried to this depth and abandoned as Herber Oil Co.'s No. 1 J. D. Witt .....T.D. 110 ft.; standing.

KLEBERG COUNTY

H. Carter et al's No. 1 R. H. Simmons, in Sec. 7, King Sur. No. 3 .....T.D. 3,205 ft.; standing.

LIVE OAK COUNTY

Catlett & O'Neill's No. 1 H. D. Miller, 2,400 ft. from SW line, 6,125 ft. from NW line of Miller ranch in SE part of county .....Spudded in and set surface pipe.
J. A. Harper's No. 1 fee, 2,130 ft. to N line, 510 ft. to E line of farm, J. Pointevant Sur. 37 .....Spudded in and standing.

LEE COUNTY

Washington-Lee Oil Co.'s No. 1 Hicket, 1,100 ft. from N line, 200 ft. from E line of tract in J. D. Varrelman Sur. .....T.D. 1,560 ft.; S.D.

MEDINA COUNTY

Robertson Drilling Co.'s No. 1 Little, 2,350 ft. from N line, 1,500 ft. from E line of E. B. Rutledge Sur., southern part of county .....Spudded in.

MILAM COUNTY

Birdwell et al's No. 1 E. and J. S. Williams, 150 ft. from N and E lines of 46-ac. tr. in Samuel P. Carson Sur., 5 miles SW of Rockdale .....T.D. 3,600 ft.; set csg.
H. W. Elliott's No. 1 Marek, 767 ft. from N line, 500 ft. from W line of 160-ac. tr. in B. Wickson Sur. ....T.D. 3,000 ft.; S.D.
Keyser & Roberts' No. 3 Ward, 125 ft. NE of No. 2 Ward, in Levi Taylor Sur. .....Location.
Keyser & Nichols' No. 1 Irwin, 450 ft. from NW line, 150 ft. from NE line of 126-ac. tract in Levi Taylor Sur. .....Location.
Michalk & Clark's No. 1 Johnson, 60 ft. S of No. 1 Johnson on 100-ac. lease in Juan Jose Acosta Sur. ..Location.

NUECES COUNTY

C. E. McCarthy's No. 1, W of Corpus Christi .....Dropped till operations start.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW, Sec. 175 .....T.D. 2,530 ft.; washing down to deepen.

SAN PATRICIO COUNTY

John F. Camp's No. 1 Jackson, SW cor. SW, Sec. 30, 3 miles from Edroy .....T.D. 5,507 ft.; S.D.; contract depth.

STARR COUNTY

Coastal O. & G. Co.'s No. 1 Kelsey-Bass, 448 ft. to N line, 150 ft. to W line of Tract 52, Sur. 2, Porcion 86..T.D. 572 ft.; drlg.
Davenport et al's No. 1 Wells, 30 miles W of Mission ..T.D. 1,093 ft.; csg. stuck.
O. W. Killam's No. 1 Wood, south end Porcion 84, SE of Rio Grande City .....T.D. 2,500 ft.; abnd.
Frank LaBorde's No. 1 Juan Marroquin, 1,250 ft. from E line, 1,225 ft. from S line of Share 21 of W two-thirds of Porcion 75 .....T.D. 378 ft.; drlg.
Sinclair & Rutherford's No. 1 J. T. Canales, 150 ft. from S and W lines of Share 69 of W half of Porcion 79, Camargo .....Location.
Strycalls Oil Corp.'s No. 1 M. E. Salinas, 155 ft. from N and W lines of lease in Porcion 80, Share 38 ....T.D. 2,050 ft.; drlg.
Strayhorn Oil Co.'s No. 1 Caffarelli, Porcion 80 .....Spudded in.
R. B. Suttle's No. 1 Guerra, 2,000 ft. to N line, 270 ft. to W line of Porcion 110 .....T.D. 810 ft.; no report.
Jack Tarver's No. 1 Guerra, NE of Rio Grande City ....T.D. 2,500 ft.; drlg.
E. L. Williams' No. 1 L. G. Madrigal, 150 ft. from N and W lines of Share 5-A of Porcion 72 of Jurisdiction of Mier .....T.D. 212 ft.; drlg.
Jess Williams' No. 1 Welch, 1,120 ft. to W line, 1,500 ft. to N line of tr. in Pedernal grant .....T.D. 840 ft.; drlg.

TRAVIS COUNTY

C. R. Franklin et al's No. 1 J. Wilson, 160 ft. from N and W lines of farm in A. Alexander Sur. .....T.D. 1,210 ft.; S.D.
Fritz Fuchs' No. 1 Swedish, 2,350 ft. from NE line, 750 ft. from NW line of Thomas Smith Sur. .....T.D. 900 ft.; S.D.
Ray & Henze's No. 1 Hatech, in C of tr. in S. Hamilton Sur. .....T.D. 900 ft.; S.D.
Ray & Orth's No. 1 Lundgren, 550 ft. from N line, 150 ft. from W line of 132-ac. tr. in L. Kimbro Sur. ....Spudded in and S.D.

WEBB COUNTY

McGinley Corp.'s No. 1 A. C. Billings, 450 ft. from N line, 150 ft. from W line of SW NE Sur. No. 71 ....Spudded in.
Phillips Rosenberg's No. 1 Green, 245 ft. from S line, 450 ft. from E line of Sur. No. 233 .....T.D. 1,962 ft.; drlg.
Phillips Rosenberg's No. 1 Laurel, 291 ft. from E and N lines of Blk. 10, Sur. 271 .....Washing down.

Phillips Rosenberg's No. 2 Laurel, 150 ft. from N and W lines of Blk. 8, Sur. 271 ..... T.D. 1,600 ft.; drlg.

WILLIAMSON COUNTY

McLean et al's No. 2 R. C. Miller, 800 ft. to S line, 160 ft. to W line of tr. in B. Manlove Sur. ..... Rigging up.
McNeill & Matthews' No. 1 Bachmayer, 300 ft. from E line, 150 ft. from S line of C. C. Browning Sur. ... Location.
O. B. Peterman's No. 1 Guentzel, 300 ft. from SE line, 567 ft. from SW line of tract in H. Cooke Sur. ..... Location.
G. L. Rowsey's No. 1 Streit, 450 ft. from SW line, 150 ft. from NW line of tract in J. West Sur. ..... Location.

WILSON COUNTY

A. M. Blume's No. 1-A Nicholson, 105 ft. N, 27 deg. E of No. 1 Johnson ..... Location.

ZAPATA COUNTY

Ballard & Mercer's No. 1 Flores, 500 ft. from NE line, 550 ft. from SE line of Blk. 27, Porcion 37 ..... T.D. 2,497 ft.; set csg.
Joe Cullinan's No. 1 E. Gutierrez, 1,932 ft. from NE line, 2,303 ft. from SE line of Charco de la India grant ..... T.D. 40 ft.; set surface csg.
Hunt & Polk's No. 1 H. Ramirez, 7,675 ft. N of S cor. and 2,915 ft. from W line of Share A of Villa grant .. T.D. 471 ft.; drlg.
O. W. Killam's No. 1 Barrocito Ranch in J. V. Borrego Sur. ..... T.D. 2,562 ft.; abnd dry.
McGinley Corp.'s No. 1 G. G. Flores, 750 ft. SW of E cor. and 150 ft. from SE line of Sur. 242 but in Sur. No. 250 ..... T.D. 1,287 ft.; drlg.
T. J. Murray's No. 1 Haynes, 2,915 ft. from NE line, 8,619 ft. from NW line of Comitas grant ..... Derrick.
Thompkins et al's No. 1 Ortiz, 200 ft. from E line, 2,000 ft. from N line of Sur. No. 1,808 ..... T.D. 100 ft.; drlg.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 60)

Mills Bennett Prod. Co.'s No. 3 Kirby, Henry Griffith League, 645 ft. E, 40 ft. S, NW cor. of tract ..... Spudded.
Mills Bennett Prod. Co.'s No. 4 Means, Henry Griffith League, 150 ft. W of No. 3 ..... Spudded.
Rio Bravo Oil Co.'s No. 3 Fisher, Wm. Bloodgood Sur., 300 ft. E and 25 ft. S of NW cor. of tract ..... Washing over stuck D.S. 4,106 ft.
Sinclair Oil & Gas Co.'s No. 12 Wilburn, Wm. Hodges Sur., 150 ft. W of No. 10 and 50 ft. N of S line ... Drlg. sand 4,273 ft.
Sun Oil Co.'s No. 2 Higgins, Wm. Hodges Sur., 50 ft. from E line of tr. and direct offset McAlbert Oil Co.'s No. 2-B Higgins ..... Derrick.
Sun Oil Co.'s No. 7 Chambers (W.O.), Wm. Bloodgood Sur. ..... Set 44 ft. 7 in. of 5-in. (O.D.) screen 5,159 ft.; swabbing.
Sun Oil Co.'s No. 14 J. Wilburn, Henry Hodges Sur., 150 ft. W of No. 13 and 50 ft. from N line ..... Drlg. shale 2,844 ft.
The Texas Company's No. 6 Wilburn (D.D.), Henry Griffith League ..... Cmtd. hole 5,139 ft.
Texas Gulf Producing Co.'s No. 7-A Barber, Henry Griffith League, 712 ft. from W line and 225 ft. from N line of tract ..... Rock 5,773 ft.; cmtd. 9⅝-in. csg. on bottom.
Texas Gulf Prod. Co.'s No. 3 Ilfrey, Henry Griffith League, 360 ft. W of No. 2 in center of tract ..... Drlg. anhydrite 1,375 ft.
Texas Gulf Prod. Co.'s No. 10-B Kirby, Henry Griffith League, 450 ft. E of No. 9-B and 250 ft. S of N line ..... Drlg. rock 1,011 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 15 Mayes, E. Wallis Sur., 450 ft. NE of No. 11 and 450 ft. NW of No. 14 ..... Drlg. sandy shale 2,483 ft.

BLUE RIDGE—FORT BEND COUNTY

Coronado Oil Co.'s No. 3 Blakely, 200 ft. E of No. 2 in Lot 9, Blk. D, E. Drew Sur. ..... Sandy shale showing oil 4,661-87 ft.; cmtd. csg.

RABBS RIDGE—FORT BEND COUNTY

Gulf Prod. Co. and Humble Oil & Ref. Co.'s No. 3 Booth-Meyers, John Rabb Sur., 1,500 ft. E of No. 2 .. Derrick.
Gulf Prod. Co. and Humble O. & R. Co.'s No. 1-B Booth, Samuel Kennedy Sur., 445 ft. N of S line due N of No. 1 T. R. Booth ..... Drlg. gumbo 1,312 ft.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 2 Davis, Robt. Peebles Sur., 2,483 ft. E, 150 ft. S of NW cor. of 1,000-ac. tr. ..... Rig.
Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 3 Lockwood, John Rabb Sur., 1,000 ft. due E of No. 2 ..... D.S. stuck 4,575 ft.
Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 2-B Lockwood & Sharp, John Rabb Sur., 816 ft. W of No. 1-B ..... Coring sand 5,258 ft.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 5-A Lockwood & Sharp, J. Rabb Sur., 1,000 ft. W, 300 ft. N of SE cor. of Tr. 3 (469.3 ac.) ..... Location.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 2-B Lockwood & Sharp, J. Rabb Sur., 1,000 ft. from E line and 300 ft. from N line of Tr. 1 (938.75 ac.).. Location.
The Texas Co.'s No. 1 Wolters (M. H. Gubbels), Samuel Kennedy Sur., 742 ft. from W line, 100 ft. from S line of 100-ac. tract ..... Drlg. hard rock 1,133 ft.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 28 Cade, N. Fitzsimmons Sur., 600 ft. S, 150 ft. E from No. 26 ..... Drlg. sand and lime 4,220 ft.
Yount Lee Oil Co.'s No. 29 Cade, N. Fitzsimmons Sur., 300 ft. E of No. 27 and 240 ft. N of No. 16 ..... Drlg. sand and boulders 1,605 ft.
Yount Lee Oil Co.'s No. 1 Broussard & Orme, 300 ft. E of N cor. of N. Fitzsimmons Sur., in Martin Dunman Sur. ..... Drlg. shale 6,490 ft.
Yount Lee Oil Co.'s No. 2 Broussard & Orme, Martin Duman Sur., 300 ft. SE of No. 1 ..... Location.
Yount Lee Oil Co.'s No. 11 Smith, Martin Dunman Sur., 130 ft. E of No. 3 and 440 ft. N of No. 5 ..... Spudded.
Yount Lee Oil Co.'s No. 2 Nellie League, Martin Dunman Sur., 230 ft. N of No. 1 and 300 ft. E ..... Derrick.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 136-A Cotton ..... Sand 540-83 ft.; comp. pumping 40 bbls. net oil.
Rio Bravo Oil Co.'s No. 137-A ..... Spudded.

HUMBLE—HARRIS COUNTY

Cullen & West's No. 4 Burt, J. B. Stevenson Sur., 50 ft. NW of No. 3 in line with No. 2 ..... Drlg. shale 4,795 ft.
J. D. Clay's No. 1 Bender, Robert Dunman Sur., 200 ft. from W line and 100 ft. from S line of 100-acre tract ..... Sand and lime 1,165 ft.
Rio Bravo Oil Co.'s No. 1 fee, 300 ft. from N line, 50 ft. from W line, Blk. 4, Bender South Addn., W. B. Adams Sur. (W.O.) ..... T.D. 3,754 ft.; sidetracking shale and lime 3,605 ft.
Sun Oil Co.'s No. 53 River, Robt. Dunman Sur., 1,100 ft. from S line tract ..... Rig up to pump 1,828 ft.
The Texas Co.'s No. 25 Wheeler & Pickens, 200 ft. N, 50 ft. E of SW cor., Lot 24, J. B. Stevenson Sur. ... Drlg. shale and boulders 1,251 ft.
E. M. Wilson's No. 9 W.&P.-Texas fee, 40 ft. out of NW cor., Blk. 35, J. B. Stevenson Sur. ..... Drlg. 525 ft.

PIERCE JUNCTION—HARRIS COUNTY

Abercrombie & Harrison's No. 2 Ritter (D.D.), Jas. Hamilton Sur. No. 51 ..... T.D. 4,576 ft.; set 51 ft. of 4½-in. screen 4,542 ft.
Andersen & Plummer's No. 7 Whitehead, Jas. Hamilton Sur. No. 51, 248 ft. S of No. 4 and 304 ft. from E line ..... Drlg. salt 3,240 ft.; top of salt 3,235 ft.
Rio Bravo Oil Co.'s No. 7-A Settegast (D.D.), Jos. Kopman Sur. No. 44, 1,400 ft. NW along NE line from SE cor. "A" lease and 100 ft. SW at right angles... Sand 4,230-72 ft; set screen.
Rio Bravo Oil Co.'s No. 24-A Settegast, J. Kopman Sur. No. 44, 1,900 ft. S and 300 ft. W of NE cor. of "A" lease ..... Set 2 joints of 4½-in. screen 4,-516 ft.; swabbed salt water; pulling screen.
Rio Bravo Oil Co.'s No. 25-A Settegast, J. Kopman Sur. No. 44 (location check to come) ..... Derrick.

MYKAWA—HARRIS COUNTY

F. R. Flannigan et al's No. 2 Minnetex, 125 ft. from W line and 100 ft. from S line, Lot 251, Wm. J. Lovett Sur. ..... T.D. 2,500 ft.; fishing bit.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 20 Esperson, C. W. Fisher Sur., 471 ft. from W line and 510 ft. N of No. 5 Esperson ..... No report.
Cranfill-Reynolds Co.'s No. 5 Davis (D.D.), Kolternut Sur., 150 ft. from S line, 1,197 ft. from E line of tract ..... No report.
Cranfill-Reynolds Co.'s No. 9 Moore's Bluff, M. Duncan Sur., 500 ft. S of N line of Moore's Bluff tract in line with No. 6 Davis and No. 6 Moore's Bluff ..... Location.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 16 Boyt (location to come) ..... Location.

SOUTH LIBERTY—LIBERTY COUNTY

The Texas Company's No. 2 Pickett (D.D.), M. G. White Sur., 350 ft. W and 62 ft. S from NE cor. of 12.2-acre tract ..... Rig up to deepen 2,536 ft.

HULL—LIBERTY COUNTY

Eclipse Oil Co., No. 2 Barrow, Jesse Devore Sur., 55 ft. W, 35 ft. S of most easterly NE cor. 2.7-ac. tract.... Drlg. 200 ft.
Hannah Oil Co.'s No. 1 Hannah, Jesse DeVore Sur., 100 ft. W of The Texas Co.'s No. 1 Hannah ..... Spudded.
D. & L. Prod. Co. and Bashara Oil Co.'s No. 1 Pevito, Jesse Devore Sur., 24½ ft. from E line and 30 ft. from N line of 5-acre strip ..... Set 480 ft. of 6⅝-in. screen 4,553 ft.; swabbed some oil; pulling tubing.
Republic Prod. Co.'s No. 61 Dolbear (W.O.) ..... Drlg. sand and shale 1,512 ft.

MARKHAM—MATAGORDA COUNTY

Claude Hamill et al's No. 2 Northern Irrigation Co., I.&G.N. Sur., Blk. 9, Sec. 5, 50 ft. NW of No. 1..... Drlg. sand 4,738 ft.
E. M. Hamill's No. 2 Meyers, Wm. Hadden Sur., 225 ft. NE of No. 1 and 210 ft. southerly from Powers & Hamill's No. 2 ..... Spudded.
Powers Prod. Co. and Hamill & Hamill's No. 2 N. R. Meyers (18-ac. tract), Wm. Hadden Sur., 240 ft. E of No. 1 ..... Sand 3,262-72 ft.; set 1 jt. of 4½-in. screen and 2½-in. tubing; comp. flowing 465 bbls. pipe line oil, 150 lbs. pressure, ⅝-in. choke.
Smith et al's No. 3 Hudson, Henry Parker Sur., 300 ft. N of No. 2 and 175 ft. W of E line of lease..... Location.
The Texas Company's No. 1 Texas Pipe Line Co., Wm. Hadden Sur., Blk. 5, 50 ft. S and 50 ft. W of NE cor. of tract ..... Drlg. clay 240 ft.

PORT NECHES—ORANGE COUNTY

The Texas Co.'s No. 3 Stark, 350 ft. E, 100 ft. N of SW cor. of Marshall Beauchamp Sur. ..... Rig.
The Texas Co.'s No. 2 Kuhn (D.D.), 589 ft. W and 150 ft. S of NE cor. Mary E. Hall Sur. No. 2 ..... Set 15 ft. 4⅝-in. screen 4,315 ft; swbd. dry; standing.

ORANGE—ORANGE COUNTY

Sun Oil Co.'s No. 1 Bellle (D.D.) ..... Drlg. 4,305 ft.

REFUGIO—REFUGIO COUNTY

R. M. Jones' No. 1-B Mitchell (D.D.), 250 ft. NW of SE line and 250 ft. SW of Mission River ..... Drlg. hard sand 3,900 ft.
Larco Gas Co.'s No. 5 Strauch, Refugio Town tract, Lot 6, Blk. 2, 100 ft. W of No. 2 ..... Drlg. shale 4,100 ft.
Pearson Properties' No. 2 Ryals (W.O.), 600 ft. from S line and 150 ft. from W line of lease ..... T.D. 6,614 ft.; sidetracked at 5,194 ft.; drlg. sandy shale 5,465 ft.
United Prod. Corp.'s No. 3 W. J. Fox (D.D.), Wm. Hews & L. Brown Sur., 2,099 ft. NE along SE line from SE cor. of lease, thence 1,690 ft. NW at right angles ..... No report.
United Prod. Corp.'s No. 4 W. J. Fox, 2,600 ft. NE along SE line from SE cor. of Wm. Hews and L. Brown Sur, thence 1,420 ft. NW at right angles ... No report.
United Prod. Corp.'s No. 5 W. J. Fox, 2,150 ft. NE along SE line from SE cor. of Wm. Hews and L. Brown Sur., and thence 890 ft. NW at right angles ..... No report.

CLAY CREEK—WASHINGTON COUNTY

John Walker et al's No. 1 Henry Wendt, J. F. Perry Sur., 150 ft. from SW line and 405 ft. from SE line of tract ..... No report.

SOUTH LOUISIANA FIELDS
JENNINGS—ACADIA PARISH

Russell Campbell's No. 2 Syndicate (D.D.), 475 ft. S and 350 ft. W of NE cor. Sec. 41-9s-2w ..... Abd. 2,250 ft.
Kathleen Oil Co.'s No. 1 Syndicate fee (W.O.), Sec. 48-9s-2w ..... Tested S.W. 4,057-68 ft.; abd.
Reliable Oil Co.'s No. 2 Rawson (D.D.) ..... Dry and abd. 2,301 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Shell Petroleum Corp.'s No. 1 Fontenot, Sec. 7-9s-6w, 450 ft. due E No. 2 Heyd ..... Sand showing oil 6,895-6,907 ft.; cmtd. 7-in. csg.; drld. plug and trying to set screen.

EDGERLY—CALCASIEU PARISH

C. M. Crotty Oil Co.'s No. 7 Lillard (W.O.) ..... T.D. 2,520 ft.; S.D.
Emerson & Moore's No. 1-B Hunter, Sec. 21-9s-11w, 265 ft. SE of No. 10 ..... Set 30 ft. of 4½-in. screen 4,050 ft.; comp. pumping 50 bbls. pipe line oil.

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 3 Martha Moss, 300 ft. W, 150 ft. S, NE cor. NW SE, Sec. 3-10s-9w ..... Drlg. gumbo 3,177 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 751 fee (D.D.), Sec. 29-9s-10w.. Pulling screen to deepen 4,246 ft.
Union Sulphur Co.'s No. 769 fee, 295 ft. S, 918 ft. W of C of Sec. 29-9s-10w ..... Drlg. shale 5,575 ft.
Union Sulphur Co.'s No. 770 fee, 292 ft. S, 1,243 ft. W of center, Sec. 29-9s-10w ..... Location.
Union Sulphur Co.'s No. 771 fee, 451 ft. S, 340 ft. W of center, Sec. 29-9s-10w ..... Drlg. hard lime 2,910 ft.
Union Sulphur Co.'s No. 772 fee, 145 ft. S, 882 ft. W of center, Sec. 29-9s-10w ..... Location.

VINTON—CALCASIEU PARISH

Marrs McLean's No. 13 Gray, 464 ft. E and 460 ft. S of C of Sec. 30-10s-13w ..... Set 53 ft. of 4½-in. screen 2,693 ft.; comp. flowing 410 bbls. pipe line oil.
Vinton Pet. Co.'s No. 5 Matilda Gray (D.D.), 456 ft. W, 362 ft. N, SE cor. SW NE, Sec. 33-10s-12w..... Cmtd. bottom of hole to sidetrack 3,470 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 8 Dorion, 1,280 ft. S and 792 ft. E of NW cor. Sec. 24-12s-10w ..... T.D. 2,872 ft.; plugged back to 2,862 ft.
Calcasieu Oil Co.'s No. 17 Watkins (D.D.), 2,088 ft. E, 162 ft. S, NW cor., Sec. 24-12s-10w ..... Rig up to deepen; 2,713 ft; standing.
Calcasieu Oil Co.'s No. 2 Unsurveyed Island, 3,825 ft. N, 1,080 ft. E, SW cor., Sec. 39-12s-10w..... Shale and lime 2,717 ft.; cmtd. 6⅝-in. csg. 2,704 ft.

Calcasieu Oil Co.'s No. 34 Watkins, 435 ft. E, 430 ft. S, NW cor., Sec. 24-12s-10w.....Spudded.
R. E. Sisss' No. 2 Vincent (D.D.), 2,395 ft. S, 1,355 ft. W, NE cor., Sec. 30-12s-10w .....No report.
Sultex Oil Co.'s No. 1 Dorion, 181 ft. W, 12 ft. N of junction of W line of Sec. 46-12s-10w and S bank of Kelso Bayou in Sec. 36.....Drlg. 2,627 ft.
J. G. Sutton's No. 1-B Irwin, 3,321 ft. N, in line with SW cor. Sec. 39-12s-10w, in Sec. 23.....Temp. abd. location.
J. G. Sutton's No. 2-B Irwin, 2,321 ft. N, in line with SW cor. Sec. 39-12s-10w, in Sec. 23.....Temp. abd. location.
J. G. Sutton's No. 7 Irvin, 2,120 ft. N and 1,845 ft. W of SE cor., Sec. 13-12s-10w .....Drlg. 1,875 ft.
The Texas Co.'s No. 9 State, 2,329 ft. N, 918 ft. E from SE cor. Sec. 13-12s-10w, in 12s-9w .....Building derrick.
The Texas Co.'s No. 10 State, 2,376 ft. N, 564 ft. E, SE cor. Sec. 13-12s-10w, in Twp. 12s-9w.....Location.
Union Sulphur Co.'s No. 1 Gulf land (Pure Oil Co. lease), 1,430 ft. N, 400 ft. W of SE cor. Sec. 11-12s-10w .....Drlg. sand and shale 7,410 ft.
Yount Lee Oil Co.'s No. 50 State, 600 ft. S, 700 ft. E of NW cor. of Sec. 24-12s-10w .....Location temp. abd.
Yount Lee Oil Co.'s No. 51 State, 545 ft. S, 560 ft. E of NW cor. of Sec. 24-12s-10w .....Lime rock 2,850 ft.
Yount Lee Oil Co.'s No. 52 State, 495 ft. S, 420 ft. E of NW cor. of Sec. 24-12s-10w .....Location temp. abd.
Yount Lee Oil Co.'s No. 53 State, 445 ft. S, 275 ft. E of NW cor. of Sec. 24-12s-10w .....Location temp. abd.
Yount Lee Oil Co.'s No. 54 State, 978 ft. S and 455 ft. Wof NE cor. of Sec. 23-12s-10w .....Location temp. abd.
Yount Lee Oil Co.'s No. 55 State, 995 ft. S and 585 ft. W of NE cor. of Sec. 23-12s-10w .....Location temp. abd.
Yount Lee Oil Co.'s No. 56 State, 1,000 ft. S and 725 ft. W of NE cor. of Sec. 23-12s-10w .....Location temp. abd.

STARKS—CALCASIEU PARISH

Gulf Refining Co.'s No. 30 Lutcher-Moore, Sec. 19-9s-12w, 300 ft. S of No. 16 and 300 ft. W of No. 20 ....Drlg. shale and lime 856 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 11 Yount Lee, Sec. 12-13s-8w, 800 ft. S 66 deg. 42 min. from No. 9 .....Location.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Grant & Baker's No. 1 Chesley, W. C. White Sur., 150 ft. from NW line and 150 ft. from SW line of 26-acre tract (northeast of Raccoon Bend Field) .....Cmtd. 10-in. csg. 196 ft.; temp. abd.
Mulvey & Conklin's No. 1 Trenchman, James Cummins Hacienda Sur., 1,244 ft. from S line and 274 ft. from W line of 32.35-acre tract .....Clay 790 ft.; temp. abd.
O'Hara Oil & Gas Co.'s No. 1 Neilius, J. C. Cummings Hacienda Sur., 650 ft. N of No. 1 Schroeder in 18-acre tract, north edge Mill Creek .....Derrick.
Pomacal & Boletka's No. 1 Schebajsa, 329 ft. N, 78 deg. E of N cor. B. Dottery Sur., near center of SW line of S. F. Austin 4 League on west fork of Mill Creek..Temp. abd. 1,740 ft.
Taylor & Mitchell's No. 1 Schlecte, 1,850 ft. from SE line and 3,100 ft. from NE line of John Fitzgibbons Sur. .....Sandy shale 2,672-78 ft.; to make D.S. test.

BRAZORIA COUNTY

John Deering's No. 1 C. W. Chapman, 294 ft. from S line and 104 ft. from E line of Lot 2, Andrew Robinson Sur. .....Fishing drill stem 1,598 ft.
J. R. Ingram's No. 2 Levitt, John Peske Sur., 75 ft. NW of No. 1 .....S.D. 1,735 ft.
The Texas Co.'s No. 2 Belcher, 1,728 ft. southeasterly and 1,231 ft. southwesterly at right angles out of N cor. tract, Harvey N. Little Sur. .....Drlg. hard sand 5,911 ft.
The Texas Company's No. 3 Belcher, Manvel, Harvey N. Little Sur., 1,320 ft. southwesterly and 200 ft. southeasterly out of N cor. of Belcher lease .....Location.

BURLESON COUNTY

Ball & Knob's No. 1 Polansky, M. B. Lawrence Sur., 359 ft. from E line and 469 ft. from N line of 158-ac. tr. .....Rig.
E. M. Gracey et al's No. 1 Bracey, J. Lastly Sur., 850 ft. from E cor. of P. Taylor 110 acres, SE along NE line of J. G. Houston 160 acres, thence 180 ft. at right angles in 3-acre tract .....Location.
Marek & Son's No. 1 A. Marek, N. McFaddin Sur., 1,068 ft. N and 225 ft. W of SE cor. of tract .....Standing 2,210 ft.
M. O. & T. Corp.'s No. 1 Rigers .....S.D. 2,478 ft.
Sampson Oil & Gas Co.'s No. 1 Duckworth & Gilley, 100 ft. from S line and 100 ft. from W line of Blk. 8, P. Singleton Sur. .....Shut down 80 ft.
J. E. Stubblefield et al's No. 1 Mitchell, A. T. Woolridge Sur., 81 ft. SW and 4,340 ft. SE of S cor. of Joseph Henson Sur. .....Gumbo 600 ft.; standing.

COLORADO COUNTY

Coyle-Concord Oil Co.'s No. 1 Nelson, I.&G.N. Sur., Sec. 43 .....Cmtd. 10-in. csg. 680 ft; standing.

FORT BEND COUNTY

O'Hara et al's No. 1 Brown, Pilant Lake, Wm. Barrett and Abner Harris Sur., 600 ft. out of SW cor. of Brown 600-acre tract .....No report.
Naylor & DeCosta's No. 1 Naylor, 6,350 ft. N, 55 deg. E from SW cor. 653-acre tract in Christman Sur. .....Cmtd. 12½-in. csg. 1,221 ft.; S.D.

GRIMES COUNTY

Barnett et al's No. 1 Dodd, Timothy Jones Sur., 280 ft. N. Cobb & Rasmussen's No. 1 Dodd .....Rock 1,792 ft.; abd.

HARDIN COUNTY

E. M. Bracey et al's No. 1 Bracey, J. Lastly Sur., 850
Joe E. Proctor's No. 1 Russell & Teagle, 3,650 ft. E and 2,777 ft. N of NW cor. of Wm. W. Young Sur.....Drlg. 1,250 ft.
Votaw Oil Co.'s No. 1 Southwestern Lbr. Co., 150 varas W of C of E line of Mary K. Sherman Sur. .....Rigging up.

HARRIS COUNTY

T. V. Buckholve & Sons' No. 1 Miller, Arthur McCormick Sur. .....D.S. stuck 547 ft.; setting up new rig.
Flanigan et al's No. 1 Woodburn, Genoa, August Whitlock Sur., 200 ft. out of NW cor. of tract .....Derrick.
Flannigan et al's No. 2 Woodburn, 1,400 ft. S and 400 ft. E of NW cor., Aug. Whitlock Sur. .....No report.
Shubert & Alexander's No. 1 Herman Hale, 1,058 varas E of NW cor. R. A. Hanks Sur., thence 790 varas S and thence 70 varas W 74 deg. .....T.D. 5,086 ft.; sidetracked 3,000-3,320 ft.; dry and abd.

JACKSON COUNTY

Chicago Gulf Corp.'s No. 4 Druschell (W.O.) .....Standing 5,149 ft.
Chicago Gulf Corp.'s No. 10 Druschell, Hayes Sur., 1,300 ft. NW of No. 3 .....No report.

JASPER COUNTY

Hext Drlg. Co.'s No. 1 Flourney, B. F. Jones Sur., 900 ft. NW of Helmerich & Payne's No. 1 Flourney .....T.D. 4,005 ft.; washing to bottom.
Rio Neches Oil Co.'s No. 2-A Boykin, B.B.B.&C. Sur., 330 ft. SE of No. 1-A .....Rig.

JEFFERSON COUNTY

Elam & Pipkin's No. 2 Broussard, John McGaffey Sur., 150 ft. due E of No. 1 .....Rig.
Jack Shultz' No. 1 M. O. Todd, 300 varas S and 50 varas E of NW cor. of Wm. Carr Sur. .....Drlg. shale 5,469 ft.

LIBERTY COUNTY

Bain-Rheubotham's No. 1 J. M. Neal, Edward Tanner Sur., 1,800 ft. E, 1,300 ft. N of most westerly NW cor. of Margaret Evans Sur. .....Moving in rig.
Devore Oil Co.'s No. 1 Finley, 10,600 ft. from E line and 2,000 ft. from S line of A. B. Hardin Sur. .....Drlg. gumbo 3,835 ft.

MATAGORDA COUNTY

Dr. Griffith et al's No. 3 Baer, Big Hill, 5,000 ft. N, 3,000 ft. E from SW cor. of Seth Ingram Sur. .....Drlg. gumbo 1,926 ft.
United North & South Oil Co.'s No. 1 Stoddard, J. C. Keller Sur., 150 ft. W and 545 ft. N of SE cor. Blk. 55, Buckeye Townsite .....Trying to pull screen 7,529 ft.

MONTGOMERY COUNTY

Alpha Oil Co.'s No. 1 Conroe, A. McCowan Sur. .....Tentative location.
Gohlson Bros. and Rycade Oil Corp.'s No. 1 Drought. 3,340 ft. along N line of Kronkrite Sur., from NE cor., thence 250 ft. S at right angles .....Spudded.
Heep Oil Corp.'s No. 1 Roberts, Wm. H. Harrison Sur., 450 ft. out of SE cor. of tract .....Drlg. gumbo 510 ft.
Heep Oil Corp.'s No. 1 J. R. Freeman, John Davis Sur., 450 ft. from S line in center of 36.46-ac. tract .....Drlg. shale 4,310 ft.
Pevehouse Oil Co.'s No. 1 Sealey, Jas. Pevehouse Sur., 1,575 ft. N of N line of Horton & Woodson's 1,562-acre tract and 2,226 ft. E of W line of H.&W. 1,870-acre tract .....Shut down 3,984 ft.
Smith & McDaniel's No. 1 Sealey, J. C. Pitts Sur., 3,482 ft. SW along SE line of survey from most southerly corner of J. E. Anderson 61.66-ac. tract, thence 4,289 ft. NW at right angles .....Spudded.
Strake Oil Corp.'s No. 2 South Texas Development Co., Theo. Slade Sur., 2,220 ft. S 10 deg. E of No. 1 .....Sand and shale showing oil 5,010-30 ft.; making D.S. test.
Wilson Oil Co.'s No. 2 Leiberman (Kelley-Baker), 7,175 ft. from W line and 75 ft. from S line of D. James Sur. .....Dry and abd. 5,411 ft.

ORANGE COUNTY

Altex Oil Co.'s (Veteran Oil Co.) No. 1 Reed, A. Nelson Sur. No. 1, 500 ft. from N line and 250 ft. from E line of tract .....T.D. 4,655 ft.; cmtd. 6¼-in. csg. 4,650 ft.
Crew Oil Co.'s No. 1-A Mansfield, 50 ft. E of No. 1 .....Shut down 2,275 ft.

POLK COUNTY

Freeman et al's No. 2 Freeman .....Shut down 3,162 ft.
T. B. Hoffer's No. 1 Saner-Ragly Lbr. Co., 300 ft. out of most northerly cor. of most easterly County School Land Abst. 271 .....Shut down 1,517 ft.

REFUGIO COUNTY

Humble Oil & Ref. Co.'s No. 1 O'Connor (D.D.), 6,012 ft. S from NE cor. along SE line of Lon T. Rios Sur., thence 7,375 ft. W at right angles in John Keating Sur. .....Coring sandy shale 4,417 ft.
Humble Oil & Ref. Co.'s No. 2 O'Connor, John Keating Sur., 12,625 ft. N of S line at right angles and 8,158 ft. W of E line at right angles .....Drlg. shale 4,420 ft.

SAN JACINTO COUNTY

Seven Wells Oil Co.'s No. 1 Foster Lumber Co., 3,000 varas from the E line and 2,000 varas from the S line of H. Alsbury Sur. .....Drlg. 1,905 ft.

TRINITY COUNTY

John Deering's No. 1 J. B. Gibson .....S.D. 2,226 ft.
Joseph M. Weaver's No. 1 Thompson, 150 ft. out of NE cor. of I.&G.N. Sur., No. 47 .....Drlg. shale 3,469 ft.

VICTORIA COUNTY

Bunte et al's No. 2 Keeran, Martin DeLeon Sur., 200 ft. E of No. 1 .....Cored sand showing oil 5,191-93 ft.; to make D.S. test.
Houston Oil Co.'s No. 1-A McFaddin, 200 ft. from NE line, 240 ft. from SE line of I.R.R. Sur. No. 20 .....Drlg. sandy shale 4,101 ft.
T. B. Slick Estate's No. 3 McFaddin, J. Varian Sur., 2,500 ft. NW of No. 1 and 1,100 ft. NE at right angles to SW line of lease .....Sand showing oil 4,485-94 ft.; cmtd. 9-in. csg.
The Texas Company's No. 4 McFaddin, 86 deg. E, 1,728½ ft. from NE cor. of Andrew J. Gray Sur. in John M. Rine Sur. .....T.D. 2,840 ft.; fishing.

WALKER COUNTY

Hart Oil Co.'s No. 1 Thompson Lbr. Co., Jose Ortega Sur., 1,265 ft. S, 1,876 ft. W of SW cor. of J. B. Gibson's 71-acre tract .....Shut down for repairs 2,090 ft.
Geo. F. Kerr's No. 1 Smithers Bros., S. Manning Sur.....Drlg. shale 2,035 ft.

WALLER COUNTY

McDaniel and associates' No. 1 Citizens State Bank, B.B.B.&C. Sur., C of 150-acre tract .....No report.

SOUTH LOUISIANA

ASCENSION PARISH

McElroy Pet. Co.'s No. 2 Lacey, 150 ft. S, 150 ft. W of NE cor. of Sec. 29-10s-4e .....Fishing D.S. 4,560 ft.

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w .....Shut down 875 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w .....Shut down 3,650 ft.

CAMERON PARISH

Brownie-Babbette Oil Co.'s No. 1 R. A. Moore, 582 ft. W, 50 ft. S of NE cor. E half SE of Sec. 18-12s-12w..Drlg. water sand 5,350 ft.

EVANGELINE PARISH

Emile LeDeau's No. 1 Vidrine, 260 ft. W and 350 ft. S of NE cor. of Sec. 47-3s-3e .....Shut down 1,420 ft.

IBERIA PARISH

Warrick Oil Co.'s No. 1 Bernard, 912 ft. N and 150 ft. E of SW cor. Sec. 54-12s-7e .....Drlg. 2,604 ft.

IBERVILLE PARISH

Standard Oil Co.'s No. 2 Myrtle Grove-Wilbert, Bayou Choctaw, 2,040 ft. N and 600 ft. W of C of Sec. 52-9s-11e .....No report.
Standard Oil Co.'s No. 2 Gay, Bayou Choctaw, 4,500 ft. N and 600 ft. E of SW cor. SE of Sec. 52-9s-11e.....No report.

PLAQUEMINES PARISH

Lake Washington-Freeport Sulphur Co.'s No. 1 Cockrell-Moran, Sec. 14-20s-26e, 3,442 ft. E and 46 ft. N of station .....Anhydrite 1,390 ft.

POINTE COUPEE PARISH

Grand Bay Oil & Gas Co.'s No. 1 Moniotte, 10,140 ft. S and 13,450 ft. E of NW cor. Twp. 5s-11 in Sec. 34....Shut down 310 ft.

TERREBONNE PARISH

La. Gas & Fuel Co.'s No. 2 Minor, 3,480 ft. S and 1,980 ft. E of NW cor., Sec. 3-18s-16e .....T.D. 6,002 ft.; trying to sidetrack.
The Texas Company's No. 7 State-Lake Pelto, 2,216 ft. N, 104 ft. W of SE cor., Sec. 8-23s-18e .....Location.
Freeport Sulphur Co.'s No. 2 Wurzlow, Bay St. Elaine, 980 ft. S and 850 ft. W of NE cor. of Sec. 17-22s-18e..Sulphur test.
The Texas Company's No. 4 State-Lake Barre (D.D.), 1,900 ft. S and 600 ft. E of NW cor., Sec. 30-21s-20e..T.D. 3,660 ft.; pulling screen to deepen.
The Texas Company's No. 5 State, Dog Lake, 2,270 ft. S and 450 ft. E of NW cor. of Sec. 5-22s-18e .....Drlg. sand and lime 3,904 ft.
The Texas Company's No. 11 State-Lake Barre (D.D.), Sec. 36-21s-19e .....Rig up to deepen 3,806 ft.
The Texas Company's No. 1 La.L.&E., Lake Barre .....Set 45 ft. of 4¾-in. screen 3,-870 ft.; comp. flowing 2,000 bbls. pipe line oil, 445 lbs. pressure, ¾-in. choke.
The Texas Company's No. 10 State, Lake Barre .....Location.
The Texas Co.'s No. 14 State Lake Barre, 400 ft. S, 850 ft. W, NW cor. Sec. 30-21s-20e, in Sec. 37-21s-19e .....Drlg. gumbo 2,025 ft.

VERMILLION PARISH

Pure Oil Co.'s No. 2 Alliance Trust Co., 1,875 ft. E, 950 ft. S, NW cor., Sec. 34-11s-1w .....Drlg. broken sand and shale 3,976 ft.
Pure Oil Co.'s No. 1 Mulvey Irrigation (Gueydan), 253 ft. S, 390 ft. E of No. 2 Alliance, in Sec. 34-11s-1w..Location.

WEST FELICIANA PARISH

Putnam Synd.'s No. 3 Como Plantation, Sec. 51-1s-14w...Shut down 2,449 ft.

SWEEPING DECISION IN CHAMPLIN CASE

(Continued from Page 22)

to pay for the work. Neither the umpire nor the members of the committee are public officers; they are more agents or employes of the commission. The evidence does not establish that they have been guilty of favoritism or dishonesty or that the commission has acted arbitrarily or discriminated in favor of the groups paying such agents or that the plaintiff has suffered any injury by reason thereof.

The commission has not discriminated against the Oklahoma City Field or any other prorated area nor in favor of the Seminole. The relation between potential production of each pool and the amount of crude oil that without waste could be produced therefrom was not the same in all prorated pools and therefore the applicable percentages of curtailment varied.

Market Demand

The same pipe lines and purchasers did not serve or take oil from all the pools, and in some the reasonable market demand was greater in proportion to potential production than in others. Some were prorated longer and had purchasers whose facilities did not extend to others. When oil was discovered in the Oklahoma City Field the pools in the Seminole area were quite fully developed and some had passed flush production.

The latter is a more favored location in respect of trunk pipe lines and has a larger market demand although the daily production of the former is greater. The constant bringing in of new wells in the Oklahoma City Field has resulted in a continuous and rapid increase in the potential production of that field whereas market demand for oil there has increased very slowly.

Not for Price Fixing

None of the commission's orders has been made for the purpose of fixing the price of crude oil or has had that effect. When the first order was made the price was more than $2 per barrel but it declined until at the time of the trial it was only 35 cents. In each case the commission has allowed to be produced the full amount of the market demand for each pool. It has never entered any order under Section 2 of the Act.

It was not shown that the commission intended to limit the amount of oil entering interstate commerce for the purpose of controlling the price of crude oil or its products or of eliminating plaintiff or any producer or refiner from competition or that there was any combination among plaintiff's competitors for the purpose of restricting interstate commerce in crude oil or its products or that any operators' committee made up of plaintiff's competitors formulated the proration orders.

The evidence before the trial court undoubtedly sustains the findings above referred to, and they are adopted here.

1. Plaintiff here insists that the Act is repugnant to the due process and equal protection clauses of the Fourteenth Amendment.

Wasteful Taking

We need not consider its suggestion that the business of production and sale of crude oil is not a public service and that it does not devote its property to the public use. The proration orders do not purport to have been made, and in fact were not made, in respect of services or charges of any calling so affected with a public interest as to be subject to regulation as to rates and prices.

Plaintiff insists that it has a vested right to drill wells upon the land covered by its leases and to take all the natural flow of oil and gas therefrom so long as it does so without physical waste and devotes the production to commercial uses. But if plaintiff should take all the flow of its wells, there would inevitably result great physical waste even if its entire production should be devoted to useful purposes.

The improvident use of natural gas pressure inevitably attending such operations would cause great diminution in the quantity of crude oil ultimately to be recovered from the pool. Other lessees and owners of land above the pool would be compelled, for selfprotection against plaintiff's taking, also to draw from the common source and so to add to the wasteful use of lifting pressure.

And because of the lack, especially on the part of nonintegrated operators, of means of transportation or appropriate storage and of market demand, the contest would, as is made plain by the evidence and findings, result in surface waste of large quantities of crude oil.

Common Supply

In Oklahoma, as generally elsewhere, landowners do not have absolute title to the gas and oil that may permeate below the surface. These minerals, differing from solids in place such as coal and iron, are fugacious and of uncertain movement within the limits of the pool.

Every person has the right to drill wells on his own land and take from the pools below all the gas and oil that he may be able to reduce to possession including that coming from land belonging to others, but the right to take and thus acquire ownership is subject to the reasonable exertion of the power of the State to prevent unnecessary loss, destruction or waste.

And that power extends to the taker's unreasonable and wasteful use of natural gas pressure available for lifting the oil to the surface and the unreasonable and wasteful depletion of a common supply of gas and oil to the injury of others entitled to resort to and take from the same pool. Ohio Oil Co. v. Indiana, 177 U. S. 190. Lindsley v. Natural Carbonic Gas Co., 220 U. S. 61, 77. Bandini Co. v. Superior Court, 284 U. S. 8, 19 et seq. Brown v. Spillman, 155 U. S. 665, 669. Walls v. Midland Carbon Co., 254 U. S. 300, 323. Rich v. Doneghey, 71 Okla. 204. People v. Associated Oil Co., 211 Cal. 93, 100 et seq.

Not Arbitrary Interference

It is not shown that the rule for proration prescribed in Section 4 or any other provision here involved amounts to or authorizes arbitrary interference with private business or plaintiff's property rights or that such statutory rule is not reasonably calculated to prevent the wastes specified in Section 3.

We put aside plaintiff's contentions resting upon the claim that Section 2 or Section 3 authorizes or contemplates directly or indirectly regulation of prices of crude oil. The commission has never made an order under Section 2. The court found that none of the proration orders here involved were made for the purpose of fixing prices.

The fact that the commission never limited production below market demand and the great and long continued downward trend of prices contemporaneously with the enforcement of proration strongly support the finding that the orders assailed have not had that effect. And if Section 2 were to be held unconstitutional the provisions on which the orders rest would remain in force.

The unconstitutionality of a part of an Act does not necessarily defeat or affect the validity of its remaining provisions. Unless it is evident that the legislature would not have enacted those provisions which are within its power, independently of that which is not, the invalid part may be dropped if what is left is fully operative as a law.

Connolly v. Union Sewer Pipe Co., 184 U. S. 540, 565. Pollock v. Farmers' Loan & Trust Co., 158 U. S. 601, 635. Reagan v. Farmers' Loan & Trust Co., 154 U. S. 362, 395-396. Field v. Clark, 143 U. S. 649, 695-696. Section 10 declares that the invalidity of any part of the Act shall not in any manner affect the remaining portions.

Scheme of Regulation

That discloses an intention to make the Act divisible and creates a presumption that, eliminating invalid parts, the legislature would have been satisfied with what remained and that the scheme of regulation derivable from the other provisions would have been enacted without regard to Section 2. Williams v. Standard Oil Co., 278 U. S. 235, 242. Crowell v. Benson, 284 U. S. —, —. Utah Power & Light Co., v. Pfost, — U. S. —.

The orders involved here were made under other sections which provide a complete scheme for carrying into effect, through action of the commission, the general rules laid down in Sections 3 and 4 for the prevention of waste. See Julian Oil & Royalties Co. v. Capshaw, 145 Okla. 237, 243. The validity of Section 2 need not be considered.

2. Plaintiff contends that the Act and proration orders operate to burden interstate commerce in crude oil and its products in violation of the commerce clause. It is clear that the regulations prescribed and authorized by the Act and the proration established by the commission apply only to production and not in sales or transportation of crude oil or its products.

Such production is essentially a mining operation and therefore is not a part of interstate commerce even though the product obtained is intended to be and in fact is immediately shipped in such commerce. Oliver Iron Co. v. Lord, 262 U. S. 172, 178. Hope Gas Co. v. Hall, 274 U. S. 284, 288. Foster Packing Co. v. Haydel, 278 U. S. 1, 10. Utah Power & Light Co. v. Pfost, supra. No violation of the commerce clause is shown.

3. Plaintiff assails the proration orders as unauthorized, lacking basis in

TEXT OF OKLAHOMA STATUTE SUSTAINED BY THE DECISION

The Oklahoma conservation statute is as follows:

C.O.S. 1921, Sections 7,954-7,963.

Section 1—That the production of crude oil or petroleum in the State of Oklahoma, in such a manner and under such conditions as to constitute waste, is hereby prohibited (Section 7,954).

Section 2—That the taking of crude oil or petroleum from any oil-bearing sand or sands in the State of Oklahoma at a time when there is not a market demand therefor at the well at a price equivalent to the actual value of such crude oil or petroleum is hereby prohibited, and the actual value of such crude oil or petroleum at any time shall be the average value as near as may be ascertained in the United States at retail of the by-products of such crude oil or petroleum when refined less the cost and reasonable profit in the business of transporting, refining and marketing the same, and the Corporation Commission of this State is hereby invested with the authority and power to investigate and determine from time to time the actual value of such crude oil or petroleum by the standard herein provided, and when so determined said commission shall promulgate its findings by its orders duly made and recorded, and publish the same in some newspaper of general circulation in the State (Section 7,955).

Section 3—That the term "waste" as used herein, in addition to its ordinary meaning, shall include economic waste, underground waste, surface waste, and waste incident to the production of crude oil or petroleum in excess of transportation or marketing facilities or reasonable market demands. The Corporation Commission shall have authority to make rules and regulations for the prevention of such wastes, and for the protection of all fresh water strata, and oil and gas bearing strata, encountered in any well drilled for oil (Section 7,956).

Section 4—That whenever the full production from any common source of supply of crude oil or petroleum in this State can only be obtained under conditions constituting waste as herein defined, then any person, firm or corporation, having the right to drill into and produce oil from any such common source of supply, may take therefrom only such proportion of all crude oil and petroleum that may be produced therefrom, without waste, as the production of the well or wells of any person, firm or corporation, bears to the total production of such common source of supply. The Corporation Commission is authorized to so regulate the taking of crude oil or petroleum from any or all such common sources of supply, within the State of Oklahoma, as to prevent the inequitable or unfair taking, from a common source of supply, of such crude oil or petroleum, by any person, firm, or corporation, and to prevent unreasonable discrimination in favor of any one such common source of supply as against another (Section 7,957.)

Section 5—That for the purpose of determining such production, a gauge of each well shall be taken under rules and regulations to be prescribed by the Corporation Commission, and said commission is authorized and directed to make and promulgate, by proper order, such other rules and regulations, and to employ or appoint such agents with the consent of the governor, as may be necessary to enforce this act (Section 7,958).

Section 6—That any person, firm, or corporation, or the attorney general on behalf of the State, may institute proceedings before the Corporation Commission, or apply for a hearing before said commission, upon any question relating to the enforcement of this act, and jurisdiction is hereby conferred upon said commission to hear and determine the same. Said commission shall set a time and place, when and where such hearing shall be had and give reasonable notice thereof to all persons or classes interested therein, by publication in some newspaper or newspapers, having general circulation in the State, and in addition thereto, shall cause reasonable notice in writing to be served personally on any person, firm or corporation complained against. In the exercise and enforcement of such jurisdiction, said commission is authorized to determine any question or fact, arising hereunder, and to summon witnesses, make ancillary orders, and use mesne and final process, including inspection and punishment as for contempt, analogous to proceedings under its control over public service corporations, as now provided by law (Section 7,959).

Section 7—That appellate jurisdiction is hereby conferred upon the supreme court in this State to review the action of said commission in making any order, or orders, under this act. Such appeal may be taken by any person, firm or corporation, shown by the record to be interested therein, in the same manner and time as appeals are allowed by law from other orders of the Corporation Commission. Said orders so appealed from shall not be superseded by the mere fact of such appeal being taken, but shall be and remain in full force and effect until legally suspended or set aside by the supreme court (Section 7,960).

Section 8—That in addition to any penalty that may be imposed by the Corporation Commission for contempt, any person, firm, or corporation, or any officer, agent or employe thereof, directly or indirectly violating the provisions of this act, shall be guilty of a misdemeanor, and upon conviction thereof, in a court of competent jurisdiction, shall be punished by a fine in any sum not to exceed five thousand dollars ($5,000), or by imprisonment in the county jail not to exceed thirty (30) days, or by both fine and imprisonment (Section 7,961).

Section 9—That in addition to any penalty imposed under the preceding section, any person, firm or corporation, violating the provisions of this act, shall be subject to have his or its producing property placed in the hands of a receiver by a court of competent jurisdiction, at the suit of the State through the attorney general, or any county attorney, but such receivership shall only extend to the operating of producing wells and the marketing of the production thereof, under the provisions of this act (Section 7,962).

Section 10—That the invalidity of any section, subdivision, clause or sentence of this act shall not in any manner affect the validity of the remaining portion thereof (Section 7,963).

fact and arbitrary. But it failed to show that the orders were not based upon just and reasonable determinations of the governing facts: Namely, that proportion of all crude oil, which may be produced from a common source without waste, that the production of plaintiff's wells bears to the total production from such source.

Gauges were taken to determine the potential production of each well under rules and regulations prescribed by the commission and not shown to be inappropriate or liable to produce arbitrary or discriminatory results. It does not appear that the agents—umpires and committees—employed by the commission with the consent of the governor to enforce the provisions of the Act, did more than to make investigations necessary to secure for the commission data required to make the proration directed by Section 4 or that they acted otherwise than as faithful subordinates.

Not Discrimatory

Plaintiff has not shown that any act or omission of these agents subjected it to any disadvantage or that the prorations were arbitrary or discriminatory in any respect. Obviously the commission, without agents and employes, could not make or enforce proration as directed by the Act.

The plaintiff is not entitled to have the commission's orders set at naught and the purposes of the Act thwarted merely because, in the absence of legislative appropriations therefor, the salaries and expenses of agents or employes were paid out of funds raised by operators interested in having proration established under the statutory rules.

Proration, required to prevent waste defined in Section 3 and to give effect to the rule prescribed by Section 4, changes according to conditions existing from time to time and percentages valid at one time may be inapplicable, unjust and arbitrary at another. Bluefield Co. v. Public Service Comm., 262 U. S. 679, 693. Knoxville v. Water Co., 212 U. S. 1, 19. As plaintiff has failed to prove that any order in force at the time of the trial was not in accordance with the rule prescribed by Section 4 or otherwise, invalid the part of the decree from which it appealed will be affirmed.

But such affirmance will not prevent it in an appropriate suit, a different state of facts being shown to exist, from having an injunction to restrain the enforcement of any order proved to be not authorized by the Act or unjust and arbitrary and to operate to plaintiff's prejudice. Cf. Euclid v. Ambler Co., 272 U. S. 365, 395.

No. 486

This is defendant's appeal from that part of the final decree that declares that Sections 8 and 9 are not valid and enjoins the attorney general and county attorney from enforcing them. In its conclusions of law the court below declares that these sections in terms impose penalties for violation of the Act, and not for violation of the orders of the commission: That Sections 1, 3, 4, 5 and 6 are too indefinite and uncertain to warrant the imposition of the prescribed penalties and that therefore both sections are invalid.

Penal Statute

The opinion points out that the Act is a penal statute and also a regulatory measure to be supplemented by rules, regulations and orders of the commission. It suggests that an operator or producer of oil from a common pool should not be required at the peril of severe penalties to determine whether in the operation of his oil well he is committing "economic waste" or producing in excess of the "reasonable market demands" because these terms are not defined in the Act and are of uncertain and doubtful meaning.

1. Defendants insist that no question concerning the validity of Section 8 was before the court.

We do not find any direct or definite allegation in the record that defendants have threatened or are about to cause plaintiff to be prosecuted under Section 8. The court found that no prosecution had been commenced against plaintiff, its officers or employes under that section.

There is no finding, or evidence sufficient to require one, that any such prosecution was imminent or contemplated. And the opinion states in substance that Section 9 was the only provision of the Act as a penal statute that was before the court.

Equity jurisdiction will be exercised to enjoin the threatened enforcement of a state law which contravenes the Federal Constitution whenever it is essential in order effectually to protect property rights and the rights of persons against injuries otherwise irremediable; and in such case a person, who as an officer of the State is clothed with the duty of enforcing its laws and who threatens and is about to commence proceedings, either civil or criminal, to enforce such a law against parties affected, may be enjoined from such action by a Federal Court of Equity. Terrace v. Thompson, 263 U. S. 197, 214, and cases cited.

The burden was upon plaintiff seeking to invoke that rule definitely to show that in order to protect its property rights it was necessary to restrain defendants from enforcing Section 8. Indeed the record before us indicates that plaintiff did not show that its rights were directly affected by any danger of prosecution under Section 8 and therefore had no standing to invoke equity jurisdiction against its enforcement. Oliver Iron Co. v. Lord, supra, 180-181. Massachusetts v. Mellon, 262 U. S. 447, 488. Aetna Insurance Co. v. Hyde, 275 U. S. 440, 446 et seq.

Undoubtedly Section 8, if invalid, may be severed from other parts of the Acts without affecting the provisions under which the prorations were made. Ohio Tax Cases, 232 U. S. 576, 594. It follows that the lower court erred in passing upon the validity of that section, and the decree will be modified to declare that no question as to Section 8 was before the court.

2. Defendants also maintain that no question as to the validity of Section 9 was before the court.

Record of Litigation

The record shows that plaintiff having taken crude oil in excess of the quantities allowed by the orders, the attorney general, May 28, 1931, brought suit under Section 9 in a state court to have a receiver appointed for its wells. And he procured that court to issue a temporary injunction restraining plaintiff from producing oil or violating the Act or proration orders pending the appointment of a receiver.

On the next day plaintiff filed an amended and supplemental bill applying for a stay of enforcement of the proration orders pending the determination of the appeal, No. 122, to this court.

June 13 the lower court, upon plaintiff's application and affidavits submitted by the parties, found that plaintiff would suffer irreparable loss and injury unless the stay be granted. And it entered an order: Restraining the commission from instituting proceedings under Section 6 of the Act; restraining the attorney general and county attorney from prosecuting under Section 9 receivership proceedings against plaintiff; allowing plaintiff, on conditions which need not be stated here, to produce up to 10,000 bbls. daily.

It is clear, if Section 9 is invalid, that the enforcement of its provisions pending the trial of this case would, as plaintiff claimed and the lower court found, have inflicted irreparable loss and damage upon the plaintiff. Defendants do not show or claim that the evidence does not establish that finding.

The lower court had authority to stay the enforcement of the assailed orders pending the determination of plaintiff's appeal from the denial of its motion for temporary injunction. Hovey v. McDonald, 109 U. S. 150, 161. Cotting v. Kansas City Stock Yards Co., 82 Fed. 839, 857. Cumberland Tel. Co. v. Pub. Serv. Comm., 260 U. S. 212. Virginian Ry. v. United States, 272 U. S. 658, 669 et seq.

The jurisdiction of the court was properly invoked to determine whether plaintiff was entitled to protection against the shutting down and seizure of its wells and the sale of its oil pending the Federal Court's final decision.

The attorney general, though not required so to do, dismissed the suit in the state court, and here insists that, as no proceeding for a receiver was pending, the court erred in construing or passing on the validity of Section 9. But, when regard is had to the facts and circumstances, it is clear that such dismissal did not require the court to hold that thereby the purpose of the attorney general and county attorney had changed or that prosecution under that section was no longer imminent. The court was therefore properly called upon to pass upon its validity.

3. Section 9 provides: "That in addition to any penalty imposed under the preceding section, any person, firm or corporation, violating the provisions of this Act, shall be subject to have his or its producing property placed in the hands of a receiver by a court of competent jurisdiction, at the suit of the State through the attorney general, or any county attorney, but such receivership shall only extend to the operating of producing wells and the marketing of the production thereof, under the provisions of this Act."

The language used applies to violations of the Act and does not extend to violations of orders of the commission. It is plain and leaves no room for construction. A direct and unambiguous expression would be required to warrant an inference that the State's legislature intended to authorize the seizure of producers' wells and the sale of their oil for a mere violation of an order.

The context and language used unmistakably show that the section imposes a penalty and is not a measure in the nature of, or in aid of remedy by, injunction to prevent future violations. By Section 6 the commission—which in respect of such matters is a court of record (State Constitution, Article IX, Section 19)—is empowered to punish as for contempt violation of the commission's orders by fines up to $500 per day during continuance of such violation. Sections 3,498, 3,499, C. O. S., 1921. Planters' Cotton & Ginning Co. v. West Bros., 82 Okla. 145, 147.

And Section 8 declares that, in addition to any penalty that may be imposed by the commission for contempt, one directly or indirectly "violating the provisions of this Act" shall be guilty of a misdemeanor and be punished by fine or imprisonment. And similarly the liability under Section 9 is for "violating the provision of this Act" and is "in addition to any penalty" imposed by Section 8.

Both deal with an act already committed. Moreover liability under Section 9 is not limited to seizure and operation of the offender's wells but extends to the marketing of his oil. Absolute liability arises from a single transgression, and prosecution therefore may be had after all occasion for restraint of production has ceased.

Receivership Rejected

There is nothing in the Act by which the duration of the receivership may be determined. An owner whose wells are so seized may not, as of right, have production reduced or withheld to await a better demand or have any voice as to quantities to be produced or continue to have his oil transported by means of his own pipe lines or other facilities or have it sent to his own refinery or delivered in fulfillment of his contracts. Plainly such a taking deprives the owner of property without compensation even if the moneys received for oil less expenses were accounted for by the receiver.

The suit is prosecuted by the State to redress a public wrong denounced as crime. The provisions of Section 9 are not consistent with any purpose other than to inflict punishment for violation of the Act and they must be deemed as intended to impose additional penalties upon offenders having oil producing wells. Boyd v. United States, 116 U. S. 616, 634. United States v. Reisinger, 128 U. S. 398, 402. Huntington v. Attrill, 146 U. S. 657, 667, 668.

As Section 9 declares that one "violating the provisions of this Act shall be subject" to the prescribed penalties, it is necessary to refer to the regulatory provisions here involved. Section 1 prohibits "production of crude oil * * * in such manner and under such conditions as to constitute waste." Section 3 declares that, "in addition to its ordinary meaning," "waste" shall include "economic waste, underground waste, surface waste, and waste incident to the production of crude oil or petroleum in excess of transportation or marketing facilities or reasonable market demands."

Section 4 provides that whenever full production from any common source can only be obtained "under conditions constituting waste" then one having the right to produce from such source may take therefrom only such proportion "that may be produced therefrom, without waste, as the production of the well or wells" of such taker "bears to the total production from such common source of supply."

Must Be Explicit

There is nothing to support defendants' suggestion that the regulatory provisions of the Act do not become operative until the commission has defined permissible production. As shown above, Section 9 does not cover violations of orders of the commission. The validity of its provisions must be tested on the basis of the terms employed.

In Connally v. General Construction Co., 269 U. S. 385, 391, this court has laid down the rule that governs here: "That the terms of a penal statute creating a new offense must be sufficiently explicit to inform those who are subject to it what conduct on their part will render them liable to its penalties, is a well-recognized requirement, consonant alike with ordinary notions of fair play and the settled rules of law.

"And a statute which either forbids or requires the doing of an act in terms so vague that men of common intelligence must necessarily guess at its meaning and differ as to its application, violates the first essential of due process of law."

The general expressions employed here are not known to the common law or shown to have any meaning in the oil industry sufficiently definite to enable those familiar with the operation of oil wells to apply them with any reasonable degree of certainty. The meaning of the word "waste" necessarily depends upon many factors subject to frequent changes. No act or definite course of conduct is specified as controlling and, upon the trial of one charged with committing waste in violation of the Act the court could not foresee or prescribe the scope of the inquiry that reasonably might have a bearing or be necessary in determining whether in fact there had been waste. It is no more definite than would be a mere command that wells shall not be operated in any way that is detrimental to the public interest in respect to the production of crude oil.

Unreasonable Requirement

And the ascertainment of the facts necessary for the application of the rule of proportionate production laid down in Section 4 would require regular gauging of all producing wells in each field, a work far beyond anything that reasonably may be required of a producer in order to determine whether in the operation of his wells he is committing an offense against the Act.

In the light of our decisions, it appears upon a mere inspection that these general words and phrases are so vague and indefinite that any penalty prescribed for their violation constitutes a denial of due process of law. It is not the penalty itself that is invalid but the exaction of obedience to a rule or standard that is so vague and indefinite as to be really no rule or standard at all. United States v. Cohen Grocery, 255 U. S. 81, 89. Smail Co. v. Am. Sugar Ref. Co., 267 U. S. 233, 239. Connally v. General Construction Co., supra. Cline v. Frink Dairy Co., 274 U. S. 445, 454. Smith v. Cahoon, 283 U. S. 553, 564.

No. 122, dismissed; No. 485, affirmed; No. 486, modified and as modified affirmed.

THIS WIRE LINE HAS DRILLED 4 WELLS GOOD FOR TWO MORE

It's still going strong after 14,400 feet of hole. The Arkansas Drilling Co. states that this Wickwire Spencer Wire Rope not only gave them no trouble but they expect to drill two more wells with the same rope. This is typical of the service users of Wickwire Spencer Wire Rope enjoy. This picture is of Roeser & Pendleton Company's Arthur Christian No. 1 (22,500 barrels) Lathrop Field.

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Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

This department is conducted in order that men connected with the drilling, producing or transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depths of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

EMULSION AND SQUEEZER TRAP

What principles are applied to separation of an oil emulsion of gas, oil and water in high pressure or "squeezer" type traps?—M. C. H.

In producing a well that makes an emulsion there are a number of things to be considered. First, just where is the emulsion made, in the sand from which the mixture escapes, in the tubing or casing in the well, or in the flow line from well to traps?

If the emulsion is made in the sand it may require chemical treatment and change in temperature to break down the mixture. Traps are not primarily supposed to make separation of oil and water of such emulsions, but rather to remove the gas from the fluid and pass the fluid on to treating tanks or other apparatus where the separation of the oil and water can be effected.

If the mixture is formed in the flow line it may be possible to make some separation in a trap, but generally speaking the separation is not complete, and again the principal effect is to remove the gas from the fluid.

It has been found in the past that the formation of emulsions in the sand or in the tubing in the well can be prevented to a large extent. Chemicals are used to prevent formation of emulsions in the tubing. Regulating rate of flow in the well has reduced the amount of emulsion formed there in some cases.

As the gas, oil and water leave the well it is often the case that changes in pressure, direction of flow and other conditions at the well head will cause the oil and water to emulsify, and it is to prevent this that pressure traps are used.

Sudden release of pressure due to discharging the gas, oil and water from relatively small pipes into large-diameter receptacles permits expansion of the gas within this mixture and it has been found that this causes emulsions with some oils and waters. It follows that if the pressure on the trap is maintained at a relatively high point as compared with the casinghead pressure the gas cannot expand suddenly when it enters the trap and the formation of an emulsion is reduced greatly.

Experience has shown that baffles properly placed in this system for handling a well's production will reduce greatly the formation of emulsions, but the principal feature is the maintenance of relatively high pressures on the gas, oil and water until they have had opportunity to escape from the trap to their respective outlets.

If an emulsion has been formed outside the trap it is possible that high pressures will tend to change the surface tension of both the oil and water surfaces, and the interfacial relations then will be changed also and separation will be assisted.

The study of oil and water emulsions becomes involved if attempt is made to state specifically what physical or chemical laws are acting to produce certain results. A great deal of time has been spent in laboratories in this work and it has been found that emulsions vary over such a wide range that it is almost impossible to predetermine what will happen to any given group of gas, oil and water. The same elements under varying conditions will form different types of emulsion.

The principal concern of the oil man is not to form an emulsion and in a very practical way this has been accomplished in the well, and at the well head by the use of water knockout and high-pressure trap systems, and this is the chief purpose of the "squeezer" type traps, rather than separation of the oil and water.

It is suggested that you read an article in the September 19, 1929, issue of The Oil and Gas Journal, entitled "Problems of Winkler County Solved," in which you will find description and pictures of water knockout systems used in the Hendricks Pool, West Texas.

WHAT RATIO OF KEY WELLS?

What should be the proportion of input wells to producing wells in repressuring operations? How is the correct proportion determined?—F. N. E.

Structural conditions, the spacing of the producing wells on the property and their location on the structure, the volume of gas available for repressuring, sand conditions, water conditions, economic conditions, productive capacity of the wells and the size of the property being repressured are factors in determining the number of input wells desirable.

The cut and try method is employed by many operators in arriving at the most economical ratio of input wells to producing wells, adding or taking away pressure wells until the most economic ratio is found. In one field in the Rocky Mountain district, there is only one input well to 14 producing wells; and in many Mid-Continent fields and in one of the eastern fields, the ratio is as high as 1 to 4. In general, in the Rocky Mountain, Mid-Continent and Texas Fields, the ratios of input wells to producing wells range between 1 to 5 and 1 to 8.

In the Domingues Field in California, where the gas injection project is a combination repressuring and gas storage scheme, the gas in injected into only a few wells, because the structure is not large; and even with the large volumes of gas which are injected each day, the gas has a tendency to spread rather uniformly throughout the entire field. The number of input wells and the volumes injected into each well are determined entirely by the effect on the oil and gas productions from the wells which surround the input wells.

HOW DEEP DOES GEOPHYSICS GO?

Has it been ascertained with something like certainty just how far down into the earth geophysical methods of prospecting give information concerning conditions? If you can tell me what depth these geophysical instruments penetrate I would appreciate it.—G. H. D.

The following answer to your question is obtained from Dr. C. A. Heiland, professor of geophysics in the Colorado School of Mines:

"This question cannot be answered in a general way. I believe it will be very evident to the layman even that the depth to which geophysical methods can penetrate depends upon the size of the disturbing bodies. With a dipneedle, for instance, we will be able to locate a large mass of iron, such as a meteorite, to a depth of probably 1,000 feet, while we will not be able to notice the effect of a small piece of iron pipe for more than 2 or 3 feet. Despite this limitation, we can make a statement as to what depths have been reached so far in practical work according to our experience with the different geophysical methods. The following figures would represent the maximum depths that have been reached under favorable conditions; that is, when the buried masses were very large and showed great differences from the surroundings in their properties.

"Making very careful estimates, it may be said that it is possible to detect with the torsion balance old buried formations down to more than 5,000 feet, while salt domes probably cannot be detected any more if their top is deeper than about 4,000 feet. The limit for the seismic method seems to lie in the neighborhood of 4,000 to 5,000 feet. With the magnetic method, however, we seem to be able to trace old deep-seated igneous massives easily down to a depth of 5,000 feet. According to new computations made by Koenigsberger it seems likely that the cause of most magnetic anomalies of a regional character lies deeper than 5 to 10 kilometers.

"The radioactive method, however, has a very limited application in regard to depth. The effect of fault zones, etc., does not penetrate through a cover of more than a few meters' thickness. As to electrical methods most of the work has been done so far on deposits of very shallow depths as compared with the depths encountered in oil geology. In mining no successful prospecting has been done with electrical methods to greater depths than 500 to 800 feet so far as I know. Very little is known at present as to how deep electric methods will go in detecting the effect of salt water horizons in oil geology. The depth probably will not be much more than 1,000 feet."

WHY WAS IT CALLED THAT?

BUTTERFLY

When an oil field worker speaks of a butterfly it may be assumed that he is not thinking of gauzy winged creatures of the air or of social flitters, but that he is referring to a familiar piece of equipment used in central power pumping plants, consisting of two arms set at a suitable angle to change the direction of the transmission line in a horizontal plane. The name quite evidently was hit upon because of the general resemblance of the device to the spread of a butterfly's wings. "Angle," "holding swing" and "horizontal rocker" are other designations.

DEVELOPING POOL FAIRLY

In the new method of opening up an oil pool which some of the petroleum engineers are trying to have adopted it is my understanding that an owner of acreage in the pool would get his full share of the oil even if he never drilled a well. I would like to have this system explained to me a little. It does not seem quite fair for a man to get the same profits as the others from the oil taken out of a pool if he has done nothing himself toward getting the oil to the surface.—G. F. D.

The method of development to which you refer is based upon the theory that energy in an oil pool which causes the oil to move toward wells drilled into it is the common property of all the owners or leaseholders and that the benefits derived from this energy should be shared equally. There are many advantages obtainable through this method of development, but considering only the element of fairness to the landowners, the following excerpt from a paper by John R. Suman, of the Humble Oil & Refining Co., is in point:

"During the past few years serious attention has been given to the fundamental principles governing the production of oil. As the study of these principles has progressed it has become more and more evident, from the point of view of efficient recovery of oil and gas, that customary practice relating to well spacing and rates of withdrawal has dominated oil pool development, and that too little consideration has been given to the physical conditions and the various forces at work in the reservoir itself. The premises in the application of these fundamental principles are:

"1. Oil and gas in a reservoir are mobile, and move underground without regard to property lines on the surface, differing in this respect from other natural minerals.

"2. The pool should be produced in the most efficient manner in order to lower costs, increase recovery, and minimize waste.

"3. The oil and gas recovered from a pool should be distributed equitably among the several owners of the pool.

"An oil pool, and likewise any portion of the pool covered by a given surface leasehold, contains a determinable volume of oil and gas at all times. The oil and gas are not evenly distributed throughout the pool, and the volume per acre may vary considerably in different parts of the structure. The relative volume of oil and gas underlying the various leaseholds is subject to determination as drilling proceeds.

"Each pool possesses reservoir energy which is derived from the pressure exerted by the gas, both that dissolved in the oil and the free gas which usually lies above the oil, and in most cases from the pressure exerted by water moving into the pool from below or from the sides. Reservoir energy is also referred to in such terms as 'gas energy' and 'energy factor.' It is responsible for the movement of the oil to the wells drilled into the pool, and lifts it to the surface during the flowing life of the pool. Reservoir energy is the common property of all owners of the pool, and must be utilized for the greatest good of all. As oil and gas are produced, the various owners in the pool are entitled to share in the production in proportion to the acreage content of their land, and are entitled to share in the use of the reservoir energy in proportion to the acreage which they own. Wells for oil production should be drilled at points where the oil can be withdrawn most efficiently, irrespective of land ownership, and the oil distributed equitably among all owners without regard to the location of the producing wells."

Personal Paragraphs About Oil Men

K. N Saatjian, Los Angeles, has been appointed national secretary of the A.P.I. wire rope and manila cordage committee to succeed Donald E. Dickey.

* * *

E. E. Shanor, Petroleum Iron Works Company, Sharon, Pa., has been appointed a member of the A.P.I. manufacturer's subcommittee on riveted tanks.

* * *

W. C. Goodwin with the Standard Oil Company of Indiana at Casper, Wyo., has been pensioned and placed on the retired list after a continued service of 24 years.

* * *

H. M. Lockard, assistant superintendent of the Standard Oil Company of Indiana refinery at Greybull Wyo., is spending several weeks at the company's main works at Whiting Ind. He is expected to return to Greybull early in June.

* * *

Mr. and Mrs. Duane C. Walker are in Casper, Wyo., for a vacation from Mr. Walker's duties at the refinery of the Pan American Petroleum & Transport Company at Aruba, Dutch West Indies. They landed in Miami, Fla., April 30 and motored across the country.

* * *

Mr and Mrs. T. K. Bishop of Basin, Wyo., are visiting in Washington, D. C., and Mercersburg, Pa., the latter city to attend the graduation of their son from Mercersburg Academy. Mr. Bishop is head of the Big Horn Gas Company.

* * *

F. L. Maker, Standard Oil Company of California, has been appointed chairman of a special subcommittee to study appurtenances for A.P.I. standard riveted tanks. Other members are: C. J. Nobmann, San Francisco; Walter Samans, Philadelphia; G. S. Bays, Tulsa; F. T. Fendley, Houston.

* * *

A. G. Dana, W. H. McCoy and O. E. Garretson of Parco, Wyo., all employes of the Prairie Oil & Gas Company of Wyoming were in Casper, Wyo., last week in company with executives from the Tulsa offices. The party was making a tour of inspection of company properties in Wyoming.

* * *

W. L. Connelly, chairman of the board, W. W. Baker, vice president, and H. C. Fitzpatrick, land department, of the Sinclair Prairie Oil Company, were in Parco, Wyo., and other points in the Rocky Mountain region last week, on an inspection trip of Prairie and Producers & Refiners properties.

* * *

William Schwemlein, Parkersburg, W. Va., has been appointed national secretary of the A.P.I. rig iron committee to succeed O. H. Attridge. B. Stanley Minor, San Pedro, has been appointed a member of the California district subcommittee to replace F. J. Swann. George S. Alten, Lancaster, Ohio, has been appointed a member of the manufacturer's subcommittee.

* * *

At the annual meeting of the stockholders of the Tide Water Associated Oil Company, Axtell J. Byles, William A. Coulter, Henry W. deForest, William F. Humphrey, Robert McKelvy, Jackson E. Reynolds, Edward L. Shea, Paul Shoup and Henry S. Sturgis were re-elected directors, together with George N. Armsby, Frank Callahan and John H. Markham, Jr., who take the places of Halstead G. Freeman, Hunter S. Marston and Francis I. Fallon.

* * *

S. C. Stathers, chief geologist for Standard Oil Company of Louisiana, retiring after 25 years' service with the Standard group, was honor guest some days ago at a banquet given him by fellow members of the Shreveport Geological Society of which he is a past president. W. F. Chisholm, president of the society, was toastmaster. Mr. Strathers will visit his old home in West Virginia and later return to Shreveport. He has done geological work for the Standard companies in the British East Indies, Burma and Rumania.

J. L. Dittman, of the Wall Rope Works, has returned from a business trip to St. Louis, Mo.

* * *

C. F. Vincent, Mid-Continent manager, Byron Jackson Company, Fort Worth, Tex., was in Tulsa last week.

* * *

J. L. Shakeley, vice president, Frick-Reid Supply Corporation, has returned from a business trip to Pittsburgh, Pa.

* * *

P. W. Fenton, purchasing agent, the Tide Water Companies, Tulsa, was in East Texas last week on a business trip.

* * *

W. H. Gorey, purchasing agent, Happy Belting Company, Tulsa, made a business trip to southern Oklahoma oil fields.

* * *

E. Michener, president of Athadome Oils, Ltd., Toronto, Canada, has been named managing director and has left for the Athabaska district, northern Alberta, to supervise the company's drilling operations.

* * *

F. S. Baer, president of Pacific Company of California, has been elected an additional member of the Richfield Oil Company of California bondholders' protective committee. A. E. Van Court, of W. R. Staats Company, has been elected a member to replace N. R. Tucker, who recently resigned.

Men of the Industry

Julius C. Peters

Julius C. Peters, president of the Resolute Oil Company, which drilled the discovery well on the Badger Basin Dome in Wyoming, the record well for depth in the Rocky Mountain states, was born in Shelby, Iowa, March 18, 1887. He attended the law school of the University of Colorado, Boulder, Colo., and was admitted to the Montana bar in 1910. He practiced law in Great Falls until 1921. Mr. Peters was one of the organizers of the Homestake Oil Company, which operates in the Cat Creek Field, in Montana, and through a subsidiary company took an active part in the early development of the Kevin-Sunburst Field. In 1927 he began the test at Frannie, Wyoming, which resulted in the proving of that field. Besides managing the affairs of the Resolute Oil Company at Badger Basin, he is a director in the Frannie Oil Company and the Homestake Oil Company.

W. P. Z. German, Skelly Oil Company, has returned to Tulsa from a visit to Fort Worth, Tex.

* * *

Fayette B. Dow, Washington counsel, has been added to the A.P.I. committee on pipe line crossings under railroad tracks.

* * *

P. H. Chaffin, district manager of the Northern Texas Utilities Company at Vernon, Tex., has been transferred to Crowley, La.

* * *

C. G. Unlaub, Dallas, Tex., representative of the Gates Rubber Company, Denver, Colo., was a business caller in Tulsa during the week.

* * *

Frank H Knickerbocker, with the Midwest Refining Company at Conrad, Mont., has been spending a week visiting old time friends in Casper, Wyo.

* * *

Frederick A. Bush, head of the geological department of Sinclair Oil & Gas Company for some years, has been made chief geologist of the Sinclair Prairie Oil Company.

* * *

J. H. Ryan, superintendent, Gulf Refining Company, tank car department, has succeeded C. K. Miller, also of the Gulf Refining Company, on the A.P.I. subcommittee on railroad equipment.

* * *

John P. West, formerly in charge of the marketing division of the land department of the Prairie Oil & Gas Company, has joined the land department staff of the Amerada Petroleum Corporation.

* * *

Charles Remus, with the Tropical Oil Company, of El Centro, Colombia, South America, has returned to that place after visiting his mother, Mrs. Bertha Remus, and his son, Charles, Jr., at their home in Oil City, Pa.

* * *

Enriched by oil, W. R. Nicholson, Gregg County, Texas, landowner, will erect a $25,000 public library on the Longview High School campus. The edifice will be a memorial to his son, Ronald, who died several years ago.

* * *

C. J. Nobmann, Shell Oil Company, San Francisco, has been appointed chairman of the California district subcommittee of the A.P.I. production division tank committee to succeed Ralph J. Reed who remains as a member.

* * *

H. W. C. Prommell, geologist, has returned from Russia where he was employed by the Russian government in research and exploratory work. He addressed the Rocky Mountain Association of Petroleum Geologists at Auditorium Hotel, Denver, Colo., on "Conditions in Russia."

* * *

C. R. Burke, who has been connected with engineering work in the Mid-Continent area for several years, has become associated with James R. Cole of Tulsa, solicitor of patents and patent causes. Mr. Burke has specialized in processing at refineries and natural gasoline plants.

* * *

Ed H. Argue, with the Cardinal Oil Company at San Angelo, Tex., has been made foreman of the company's lease "Ow" in Pecos County, in which the company purchased a half interest in and operating control from the Phillips Petroleum Company. Mr. Argue has been located in the Toborg Tippett Pool in Pecos County.

* * *

George S. Buchanan, geologist for the Standard Oil Company of Kansas, has moved from Tulsa to Wichita, Kans., from which city the company's producing operations are conducted. Mrs. Buchanan, with her two children, will pass the summer at her former home in Mount Pleasant, Mich., returning to Wichita in the fall. Mr. Buchanan was formerly with the Tulsa Oil Company, taken over recently by the Standard of Kansas.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas, and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

FLUXING ACTION OF FUEL OIL

I am informed that some crude oils, which contain large percentages of sulphur and hydrogen sulphide, are treated with a dilute solution of soda ash before the crude is put in the still. There is a question as to whether oil containing soda ash has caused severe corrosion to our silica brick in the open hearth furnaces. When using the soda ash solution is all of the alkali separated or does some remain in the oil? If some should remain is it united with sulphur as sodium sulphate or the sulphide?—C. C.

Occasionally certain crude oils have been pretreated with alkaline materials at the refinery before running in the stills, for the purpose of neutralizing acid and the removal of hydrogen sulphide. Fortunately, oils requiring such treatment are rare. I do not know of a refinery pretreating crude oil for this purpose at this time. However, when practiced, the treatment consists in washing the oil with an alkaline water solution; usually the alkali is caustic soda but soda ash has been used. The products of the reaction are soluble in the excess water, so are removed upon settling and do not combine with the oil. If the operation were hurried, or the settling not complete, some sulphates and sulphide might remain suspended in the oil.

Fuel oil is the residual product obtained after the separation, by distillation, of the other products of petroleum and consequently has received no chemical treatment. The common specifications for fuel oil stipulate that the solid matter, benzol insoluble sediment, shall not exceed 1 per cent although this is frequently modified to permit shipments of oil containing 2 per cent. This insoluble residue is essentially carbon so it is completely combustible under furnace conditions.

Petroleum ash is a very small part of the original oil, seldom exceeding 0.01 per cent, but the composition of this ash may vary to a considerable extent, the substances making up the ash depend on the source of the petroleum. Many of the common metals have been found in it and often traces of copper, gold, silver, lead and vanadium. Thomas reports, Journal Institution Petroleum Technologists, 10, 216, 1924, the composition of a petroleum ash as follows:

COMPOSITION PETROLEUM ASH

	Per cent
Iron and aluminum oxides	26.96
Sulphur trioxide	35.29
Vanadium pentoxide	5.03
Phosphorus pentoxide	5.53
Manganese oxide	4.39
Silica	2.70
Lime (CaO)	2.31
Magnesia	1.18

This analysis represents the ash collected as flue dust and may have contained some material derived from the brick of the furnace. At any rate, when considering the total mineral residue and the nature of the substances present, it does not appear that the quantity of fluxing agents would be sufficient to do any harm to furnace walls constructed of the proper quality fire bricks. Sometimes damage may result from the high temperatures obtained with good fuel oil because the fire brick are not highly refractory.

CARBON MONOXIDE FROM AIRCRAFT ENGINES

The dangerous character of exhaust gases from automobiles is known. The location of the airplane engine and the partial vacuum, due to the high speeds, must create a hazard in that objectionable gases containing carbon monoxide might collect in the cabins of the closed planes. Has this matter been investigated?—M. W. C.

The U. S. Navy Medical Corps, under the direction of Comdr. J. J. White, has for some time been investigating the composition of the exhaust gases from the airplane engines and the possible accumulation of dangerous quantities of carbon monoxide in the cabin and about the pilot.

The attention of the navy was brought to the matter by the finding of carbon monoxide in the blood of Capt. Arthur H. Page of the Marine Corps, after his fatal crash at the national air races in September, 1930. So small a degree of saturation was reported in this case that medical opinion absolved carbon monoxide as a direct factor in the accident, but the fact that it was present at all led to the studies which Doctor White and his assistants have since been making.

Small traces of carbon monoxide have been found in the cabins of some planes, but in no case enough to represent any dangerous condition, although the quantity might have been sufficient to cause headache or be a contributory factor in airsickness. Doctor White explained that, fortunately, it was a simple matter, once the presence of the gas had been established, to find its source in the particular instance and eliminate it.

It seemed absurd at first to associate gas poisoning with flight at high speed in an open cockpit airplane like the majority of the navy craft.

These studies, which have taken him up to 20,000 feet altitude in navy planes, have led to the detection of the gas in the whirls of air just at the pilot's breathing level—even in open cockpits at high speed—and have resulted in the elimination of the causes of this condition by changes in the exhaust stacks of the motors and other modifications. In the course of the work an instrument for the detection of the gas in flight has been perfected, and two of these form a part of the equipment of the U. S. Airship Akron. When the navy buys an airplane now, one of the requirements which the manufacturers must meet is that it shall be carbon monoxide free.

STORAGE HANDLING AND REFINING LOSSES

I wish to estimate the loss of oil through handling, storage and refining, but have failed to find the required articles on the subject. I want to arrange the total loss against the original barrel of oil at the well. Anything you can give me on this subject will be appreciated.—E. N. P.

So far as I am aware there are no data showing just what the losses may be at each stage of handling and manufacture of petroleum from the well to the consumer. It would be a great task to assemble and analyze the basic information because of the numerous variables involved. Loss will in the first place depend on the kind of crude oil, the largest losses by evaporation taking place with the most volatile oils, those of the highest gravities, and the smaller loss from the very heavy, almost solid oils, containing no gasoline.

Conditions of storage have to be considered, vapor proof tanks, water-top tanks, insulated tanks, and even the color of the paint covering the tanks are some of the factors influencing losses. Experiments made under the direction of Ludwig Schmidt of the U. S. Bureau of Mines have been reported in Circulars 2,531, 2,677, 2,834 and 3,138. These have included several various factors which have to do with volume losses when storing crude oil and gasoline. Losses when storing a 36.3° A.P.I. gravity crude oil, containing 29 per cent gasoline ranged from 0.83 per cent, tank covered with aluminum paint, to 1.24 per cent, tank painted black, per year in a tight 55,000-bbl. tank.

The unfilled space above the oil in a tank is responsible for appreciable losses due to the expansion and contraction of the vapor. There is an escape of vapor while the temperature is rising and an intake of air when the temperature is falling. The larger this space the greater will be the loss.

There are numerous factors that have to do with the losses on refining, such as type of plant and condition of the equipment. All modern plants have some kind of a gas recovery system which reduces the loss. Refining loss usually varies between 3 and 7 per cent of the oil handled.

Handling and storage losses, with particular reference to gasoline, have been investigated by C. L. Case, Petroleum World, March, 1932, page 52. Some of the conclusions from this article are: The standing storage loss under Southern California conditions was reported as given in the table.

Storage Loss, 80,000-Bbl. Tank

(Loss is per cent of capacity per year)

Product and tank—	Loss
51.6 A.P.I. gasoline; flat top Deck A	0.291
51.6 A.P.I. gasoline; flat top Deck B	0.104
Blended gasoline	3.000
Blended gasoline; insulated top	1.000
Crude oil; aver. loss per year	0.600
55 A.P.I. gasoline; low cone roof	1.230
55 A.P.I. gasoline; high cone roof	2.130

Losses Tank Cars

	Per cent loading	Transportation
Natural gasoline	1.25-5.00	0.25-10.00
Motor gasoline	0.25	.58* 2.30*

*Barge.

The breathing loss when handling domestic gasoline in the Mid-Continent district was quoted at 0.27 per cent. The filling loss, gasoline of varying volatilitf, crude oil, tanks 55,000 to 80,000-bbls. capacity, floating decks, located in California, being the predominating conditions, range from 0.03 per cent for a 28° gravity crude oil to 0.68 per cent for a 33° A.P.I. crude oil in a 100-bbl. steel top tank.

Larger losses for oil stored under the same general conditions would be larger in any of the light oil fields of the Mid-Continent area. The gas and gasoline recovered in California was reported as 42 cubic feet of gas and 0.167 gallon of gasoline per barrel of oil refined, excluding cracking. The gasoline recovery in the Mid-Continent refineries will vary from something like one-half to 4 gallons per barrel run.

REFINING CRANKCASE OIL

I am interested to build an apparatus to rerefine crankcase oil and I wonder if you could direct me as to where I could locate a full description of such an apparatus and as well the detailed process of this purification or process?—E. A. B.

It has been well established by investigations, see Reclamation of Used Lubricating Oils, by Herschel and Anderson, Bureau of Standards Technical Paper 223, obtainable through the Superintendent of Documents, Washington, D. C., upon payment of 5 cents, that lubricating oil is not destroyed when used in an automobile engine but may be contaminated by the presence of several objectionable substances which should be removed if the oil is to be reused. The recovery of lubricating oil drained from the crankcase may be profitable under some conditions but commercial reclamation plants seldom show satisfactory return due to the expense involved in the collection of the used oil and the subsequent costs for selling and distributing the recovered oil.

One consideration that has stimulated the installation of reclaiming units for this purpose has been the adoption of regulations by many cities to prohibit the disposal of crankcase drainings through the sewer systems. This precaution appears to be well founded because of the explosion and fire hazards, the inhibiting action of the oil on the bacterial growth required for the operation of certain sewage purification plants, and the stream pollution when these drainings are handled through the sewers.

Crankcase oil may contain numerous foreign substances, the exact nature of which will vary with local conditions. Some of the contaminating materials that have been found in the drainings include sand, road dust, sticks, fibers and cloth, several kinds of metals, soap, grease, water, acid, light oils such as gasoline, naphtha and kerosene, carbon and asphalt. The varied nature of the impurities indicate any purification process applied to the drainings must be more expensive and complicated than the usual process of refining petroleum for the manufacture of lubricating oils. The ordinary lubricating oil, as made from petroleum, is separated by distillation, freed from wax, chemically treated and filtered. The crankcase oil should pass through these operations and more.

All solid material should be removed, possibly by means of decantation or shallow filtering and then distilled to remove the light oils. The removal of acid, sulphur compounds and tarry material may be accomplished by a series of treatments including alkaline washes and agitating with sulphuric acid in a manner similar to that employed by the refiner. If a bright and light color is desired, the product must be filtered through fuller's earth. Reduction to the required flash-point and viscosity is incidental to the distillation.

This outline suggests that a unit for the treatment of crankcase drainings should include two filters, a still, and treaters for the washing and chemical treatment, and storage in addition. The size of these will of course depend upon the capacity of the plant.

Natural Gas Industry Developments

LONE STAR VALUATION TO TEXAS COMMISSION

AUSTIN, Tex., May 23.—The present value of Lone Star Gas Co. properties in Texas, including intangible items, is $36,929,098.91, the Texas Railroad Commission was told in a valuation report made by Hawley, Freese & Nichols of Fort Worth; Rodgers, Smith & Co. of San Antonio, and the J. A. Phillips Co. of Houston, engineers and accountants. The cost to the commission was $50,000.

The engineers did not survey distributing properties owned by the Lone Star company, such as the Lone Star Gas Co. in Fort Worth, formerly the Fort Worth Gas Co.

Upon the basis of the engineer's report, the Railroad Commission is expected to determine what gate rates for gas the Lone Star company should charge the various distributing companies in Texas communities.

It would cost $47,355,114.77 to reproduce the properties new, the engineers found.

The present value of nonphysical items, which were included in the $36,929,098.91 total value, amounts to $5,366,795.95. A going value of $1,050,000 was reported.

The physical properties now are worth $31,562,301.96, the engineers found, and it would cost $40,988,354.27 to reproduce them new today.

The present value of physical properties of the company by divisions follows: Leaseholds and mineral fee, $1,826,178.54; lands (real estate), $630,925.11; producing properties, $2,791,496.75; transmission properties, $25,268,235.90; general (including buildings and office fixtures), $1,045,465.66.

Nonphysical items include engineering costs, administration and legal expenses during construction, interest during construction, working capital and going value.

The report showed the company's producing properties to contain 35,632 acres. Nonproducing properties of the company, or its gas reserves, total 137,342 acres.

According to the company's books, its net earnings in 1930 were $5,699,316 and $4,910,000 in 1931, which do not include depreciation, depletion, interest, income tax charge or similar operating expenses. The company's 1931 revenue was given at 93.4 per cent of a five-year average and its operating expenses 113.79 per cent.

Industrial gas sales in 1931 were 17,604,333,100 feet, compared with 22,942,507,500 feet in 1930, while domestic gas sales were 17,023,687,700 feet and 17,974,266,500 feet, respectively, for the two years.

Included in the properties listed in the inventory were approximately 4,000 miles of transmission and gathering lines and 450 gas wells. The company serves approximately 250 towns with domestic and industrial gas.

While the inventory did not include Oklahoma properties of the company, the engineer who made the report estimated the Oklahoma holdings were worth from 10 to 15 per cent of the Texas total. It had not been determined definitely whether the Oklahoma evaluation would be undertaken.

Several of the towns and cities served by the company had protested charges for gas to consumers and had undertaken to reduce them arbitrarily by ordinance. The distributing companies served by the Lone Star company had appealed from those actions to the commission. The commission authorized the inventory to be in a position to pass fairly on those appeals.

Laten Stanberry, director of the gas utilities division of the commission, said the report would be submitted to the commission within the next few days.

The company carried the value of its properties, including holdings in Texas and Oklahoma, on its books at $72,182,299, data obtained by the commission showed.

CALIFORNIA GAS SALES UP IN FIRST QUARTER

LOS ANGELES, Calif., May 21.—Purchases of natural gas by public utility companies in California for the first quarter of 1932 amounted to 42,697,300,000 feet, the Railroad Commission has reported. This compares with purchases amounting to 42,583,400,000 feet for the initial three months of 1931, an increase of 113,900,000 feet.

On the basis of the comparative monthly figures it would appear that warmer weather arrived sooner this year than last. January purchases were 17,167,800,000 feet, as against 15,554,600,000 feet for the corresponding month in 1931. February purchases were 13,552,500,000 feet, as against 13,052,100,000 feet for February, 1931. March fell off to 11,877,300,000, as against 13,976,700,000 feet.

The purchases for the 1932 quarter show a healthy increase over buying of natural gas in the first quarter of 1930, when total sales were but 36,470,846,000 feet, a gain of more than 6,000,000,000 feet.

The gas bill paid by public utilities at the source for the current quarter is estimated as close to $1,000,000 a month despite the natural decline in demand during the warmer months.

In the matter of dry gas blown to air, the 1932 quarter showed tremendous improvement over the corresponding period last year, the figures for the recent quarter being but 6,656,500,000 feet, as against 21,676,900,000 feet for the like period of 1931. Field and plant use declined to 13,372,800,000 feet in the recent quarter, as against 20,045,600,000 feet, and repressuring and storage fell off to 2,291,600,000 feet, as against 2,503,400,000 feet.

MISSOURI-KANSAS RECEIVER

CHICAGO, May 23.—Thurlow G. Essington has been appointed receiver for the Missouri-Kansas Pipe Line Co. by Judge Charles E. Woodward of the Federal Court. The action came after several months of litigation carried on simultaneously with action against the officers of the $50,000,000 corporation. Frank P. Parish, the president, and three others will have a hearing on June 14.

Judge Woodward ordered Mr. Essington to co-operate with the receivers appointed in the state courts of Delaware, where the corporation was formed. If the state receivers refuse co-operation within 10 days, he is to take charge as sole receiver.

GAY E. HOWARD DEAD

Gay E. Howard, compressor superintendent for the Panhandle Eastern Pipe Line Co., died suddenly of a heart attack at his home in Kansas City, Mo. Born at Woodlands, W. Va., December 10, 1883, he was employed by the Hope Natural Gas Co. at Hastings, W. Va., in 1907, serving first as machinist, then as assistant engineer. In 1910 he was transferred to the Ohio Fuel Supply Co., in charge of Treat compressor station at Homer, Ohio, and later to Columbus, Ohio, where he was in charge of all compressor stations of that company. He was transferred to the Panhandle Eastern Pipe Line Co. in the fall of 1930, serving as compressor superintendent until his death.

PANHANDLE PRODUCERS SEEK USE FOR DRY GAS

AUSTIN, Tex., May 23.—Panhandle gas producers without connections saw new hope when the Railroad Commission asked the attorney general if it could authorize the use of dry gas in producing gasoline and carbon black even though it comes from a well which is not classed as an oil producer.

Hagy & Marsh and others, owners of Panhandle gas lands, have attempted to sell their gas to the major pipe lines and have failed, and now have applications pending before the commission seeking authority to extract the gasoline and burn the gas for carbon black production.

Article 6,008, revised statutes, stipulates that gas produced from a purely gas well must be used for light or fuel purposes unless the commission gives permission to employ it in repressuring purposes and other purposes for good of the public welfare. The question arises whether the use for gasoline and carbon black comes under the head of public welfare.

A three-judge Federal Court has under advisement a case involving the validity of the lately enacted pipe line law which requires the pipe lines to take gas ratably. This would give relief to the landowners who are unable to sell their gas to the pipe lines and who complain that the pipe lines are producing their gas through adjoining leases and thus depriving them of compensation. The commission asks whether under the public welfare clause they can grant the petitions to make carbon black and extract gasoline from dry gas in event the Federal Court holds the ratable taking provisions of the law unconstitutional.

There are six major pipe lines taking Texas gas to other states and to large cities, including Chicago, Denver, St. Louis, Kansas City and intermediate consuming points. Large quantities are being piped out of the State and the landowners without connections complain that their gas is refused when that on an adjoining lease is taken. Some even charge that across the state line Texas gas is put through dripping plants and carbon black extracted.

Assistant Attorney General Fred Upchurch is to pass on the question, the commission's inquiry having been referred to him. If the Federal Court upholds the law the commission can compel the pipe lines to take the gas ratably and it will be unnecessary to go further with the proposition of public welfare exceptions.

PETITION FOR RECEIVER FOR REPUBLIC GAS CORP.

HOUSTON, Tex., May 23.—Appointment of an auxiliary receiver for the Republic Gas Corp., a holding company chartered in Delaware, was sought in a petition filed in federal district court by Campbell, Myer, Foster and Myer, attorneys for a New York bondholder.

The Republic Gas Corp., according to the petition, holds the entire capital stock, except for the shares necessary to qualify the directors of the following corporations: Saxet Gas Co., Saxet Oil Co., Argus Production Co., Western Production Co., Moody-Seagraves Products Co. The corporation also holds 87½ per cent of the stock of the Missouri Valley Gas Co.

The petition alleges that applications for the appointment of receivers have been filed in Delaware and Illinois and that the petition seeks the appointment of an auxiliary receiver to take charge of the properties of the company in this section.

An attached balance sheet shows the total assets of the company at over $38,000,000.

APPRAISAL OF PLANT OF HOUSTON GAS CO.

HOUSTON, Tex., May 23.—Properties of the Houston Gas & Fuel Co. should be appraised to determine the value of equipment no longer necessary, so that it may be excluded from capital investment on which the firm is allowed to earn an 8 per cent profit and set aside 1.9 per cent for depreciation, J. G. Miller, chairman of the city affairs committee of the Taxpayers Association, wrote the city council.

Value of this obsolete property, which consists of an artificial gas plant, gas holders and other properties used before natural gas was brought to Houston, is in excess of $2,000,000. The company is allowed to earn a return of approximately $200,000 per year on this obsolete equipment.

"At present the people of Houston are not thinking about the problem of gas," he wrote. "Due, perhaps, to the fact that competing companies operate in the city, rates are lower than they might be under complete monopoly. Yet we must realize the possibility of such contingencies as consolidation, change in ownership, and the like."

He urged amendment of a section of the company's franchise which treats on depreciation. Under terms of the franchise, if revenues are insufficient to pay the expenses of operation, all taxes, depreciation charges and 8 per cent return upon the capital invested, "then this deficit shall be carried over and paid out of the net revenues for future years until the said deficit is fully paid to the company before any surplus, above the 8 per cent earnings, shall be divided with the city for such subsequent years."

The franchise of the gas company, as well as of all other public utilities, should require the submission of all contracts with allied and subsidiary companies to the council for its approval, Mr. Miller said.

He advised the city to examine the contract between the Houston Gas & Fuel Co. and the company from which it purchases gas, the Houston Gulf Gas Co.

AUTHORIZE EXPENDITURE FOR PIPE LINE AND WELLS

CHATHAM, Ontario, May 21.—Announcement has been made by Julian Garrett, manager of Northwestern Utilities, Ltd., of Edmonton, Alberta, that his company will this year spend approximately $118,000 in improvements to the transmission and distributing system which supplies Edmonton and intermediate points from the Viking Field. This expenditure is additional to $82,000 provided for the drilling of four additional wells in the Viking and Kinsella gas fields.

The appropriations include $29,000 for duplicating the main transmission line for a distance of 2 miles. The line from the field to Ryley, Alberta, a distance of 29½ miles, has already been duplicated, and it is planned to ultimately provide for duplication the entire distance to Edmonton, approximately 75 miles.

A further appropriation of $43,000 has been made for extension of services, this including the cost of new meters and installation of an auxiliary intermediate pressure line from the Edmonton limits in Bonnie Doon to the city belt line. Extensions to the low pressure system include a new regulator station in Inglewood.

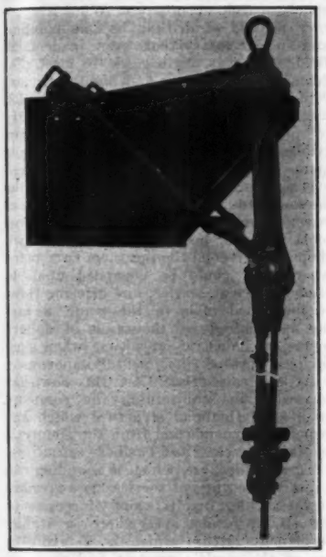
There is a further appropriation of $32,000 for geological and exploratory work.

Oil Industry Equipment and Supplies

NATIONAL BEAM HANGER HAS VALUABLE FEATURES

The National type F beam hanger, which comprises a complete connection between the walking beam and the polished rod has been introduced by the National Supply Companies. It incorporates new and important features. An improved bearing connection is placed level with the center iron bearing. This minimizes deviation from a straight lift and furnishes a connection which can be moved readily to clear the well for pulling operations.

This hanger locates entirely from the level top surface of the beam. It does not contact the back of the temper screw slot and is therefore independent of the various designs of this part. The depth



of the beam furnishes no limitation as no attachment is made to the bottom flange. The hanger is simply fixed to the beam in measured relation to the center line of the hole without fitting or adjustment, and it is unnecessary to work below the top of the beam in disconnecting or in hooking on.

Danger incurred by making connections below the beam has been eliminated and all sections have been carefully calculated and tested for ample strength. Bending in the hanger and rein members and attendant fatigue failures have been guarded against by careful design and the brace construction permits the hanger to leave its normal position in case of rod breakage and returns it positively to its seat on the beam.

The unusually large bearing permits practical low unit bearing pressures with even the heaviest pumping loads. The forged steel pin is turned, carburized, heat-treated and ground to an accurate bearing surface. SAE 64 phosphorous bearing bronze is used for the bushing which is made in one unbroken section for accuracy and efficient maintenance of the oil film. Replacement is unlikely but can be quickly made. Enclosures retain the oil, exclude dirt and hold the assembly in correct relation. The pin is reduced in diameter at the ends submerging the bearing in a bath of oil contained in the reservoir below and around the bushing. In addition a large wool yarn wick carries oil to the top of the pin above the bushing.

The oil line assembly permits filling the oil reservoir from the derrick floor by means of an alemite gun fitted for oil. This is required only at long intervals.

NOTES ABOUT TRADE LITERATURE

The Timken wear and lubricant tester is announced in an illustrated booklet of 12 pages by the Timken Roller Bearing Co., Canton, Ohio.

A four-page bulletin issued by the C. J. Tagliabue Manufacturing Co., Brooklyn, N. Y., describes the new "Tag" steam-operated controller.

The Security Engineering Co., Whittier, Calif., has issued a 10-page booklet giving facts concerning the Sievers reamer.

Bulletin No. 425, prepared for distribution by the Farrel-Birmingham Co., Inc., 415 Vulcan Street, Buffalo. N. Y., devotes its 12 pages to a detailed description of Farrel-Sykes high-speed units.

A folder issued by the Stockham Pipe & Fittings Co., Birmingham, Ala., describes a line of return bend fittings for cracking stills, tube stills and condenser coils.

The National Transit Pump & Machine Co., Oil City, Pa., is sending on request its bulletin No. 420, describing and illustrating its horizontal four-cycle double-acting gas engines.

Loose-leaf bulletins on single-stage centrifugal compressors and type B direct-current motors are being sent out by the General Electric Co.

A four-page bulletin distributed by the Allsteel Products Manufacturing Co., Wichita, Kans., describes pipe line winches for Models 30 and 20 Caterpillar tractors.

A 14-page booklet prepared by Fish-Schurman Corp., 230 East Forty-fifth Street, New York, explains the advantages of Jena fritted glass filters.

The LaPlant-Choate Manufacturing Co., Inc., Cedar Rapids, Iowa, is mailing a folder telling about LaPlant-Choate automatic roll-over scrapers.

"A Wonder Book of Rubber" is the title of an attractively printed booklet issued by the B. F. Goodrich Co., Arkon, Ohio.

"Garlock Transmission Belting," a 24-page booklet published by the Garlock Packing Co., Palmyra, N. Y., is devoted to a new duck and rubber transmission belting developed by this company.

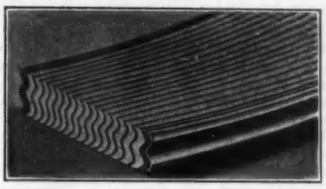
The Foxboro Co., Foxboro, Mass., is distributing bulletin No. 182, describing the new line of potentiometer control pyrometers manufactured by the Wilson-Maeulen pyrometer division of the company.

The Fisher Governor Co., Marshalltown, Iowa, is mailing a bulletin describing the inverted-bucket type steam trap.

GASKET IS DESIGNED TO MEET HARDEST DEMANDS

Garlock Guardian gaskets, developed by the Garlock Packing Co., Palmyra, N. Y., are designed, according to the company, to meet the severe requirements of modern industry, insuring safety against any pressure or temperature, resistance to gases and liquids, tight joints under changing temperatures, and continued resiliency in service.

These features are said to have been built into Guardian gaskets to an unusual degree. For service on boilers, pipe



lines or other equipment subject to frequent or rapid temperature changes—or on jobs where vibration is encountered, Guardian gaskets are offered as especially adaptable. The compression and rebound of the gaskets are not destroyed when the gasket is tightened in the joint. In fact, according to the manufacturer, the gasket really serves in the capacity of an expansion joint, adjusting itself, without leakage, to the expansion and contraction of the equipment. Patents are pending.

PRESENCE OF EXPLOSIVE GASES SHOWN BY DEVICE

The M-S-A combustible gas indicator, a new instrument for quickly determining the condition of atmospheres with respect to explosibility where flammable gases and vapors are suspected or known to be present, is announced by the Mine Safety Appliances Co., Pittsburgh, Pa. The instrument, simple in operation, shows: (1) Whether the atmosphere under test is below the lower explosive limit, at the same time indicating how near it is to being explosive; (2) whether the atmosphere under test is within the explosive range, that is, if it is an explosive mixture; (3) whether the atmosphere under test is above the upper explosive limit. An ordinary test can be made in a few seconds.

This new indicator may be used advantageously for testing gasoline and oil-storage tanks, oil tankers, manholes and along pipe lines and in general wherever there is believed to be danger of explosions from flammable vapors and gases.

By squeezing the aspirator bulb, a sample from any desired location is drawn rapidly through the flexible metal tubing to the instrument. Up to 60 feet of sampling line can be used with the instrument for sampling from inaccessible places.

The instrument has two platinum wire filaments which are heated to a relatively low temperature by current from two dry cells, one of the filaments being exposed to the action of the gas sample. Combustible gas in the sample is oxidized or burned catalytically on this platinum wire and any increase in temperature from this combustion increases the electrical resistance of the wire. This increase in resistance is proportional to the amount of flammable vapors in the sample and is measured by a milliameter, the scale of which is calibrated to give readings direct in percentage of lower explosive limit concentration.

WORTHINGTON ANNOUNCES NEW MODEL WATER METER

The Worthington Pump & Machinery Corp., Harrison, N. J., has added another model of water meter to its already extensive line. This meter, the Model GA, said to be most accurately developed for extremely low flows as well as for intermediate and high flows, is built in sizes from five-eighths to 2 inches, with normal flow limits from 1 to 160 gallons per minute.

Of the positive displacement disc type, all register gears are fitted with rubber-bushed bearings. The register box, of heavy construction, is fitted with a double lid to facilitate cleaning of the cover glass. The train assembly comprises four cast bronze gears and four pinions, all rigidly fastened to Monel metal spindles which revolve in replaceable hard-rubber bushings. Although standard construction provides an inclosure for oil, the train easily may be converted to the open type by the substitution of an open train plate—removal of three screws releasing the train from the main case.

The disc or measuring chamber is in two sections, held together by a snap joint without screws. This construction permits the case to separate without distortion in the event of freezing. Additional protection is gained by the use of a castiron frost bottom on the three smaller meters. Though sufficiently strong to withstand the pressures encountered in regular service, this bottom breaks when the water in the meter freezes. This relieves the strain on the interior parts and prevents damage to the meter. Replacement of the bottom at nominal cost makes the meter again ready for service.

The stuffing box is cast on the main case instead of being a part of the train or register box. No gaskets or lock nuts are necessary.

SAVINGS ARE EFFECTED IN PRESSURE REGULATOR

A reduction in construction and assembly costs of a gas pressure regulator units has been made possible by the utilization of the shielded arc process of arc welding. The unit is installed in the Muncie, Ind., station of the Ohio Fuel Gas Co. to reduce the pressure on trunk lines of city use. It consists of six high-pressure regulators and 12 gate valves. In the meter end there are seven merco stops and seven gate valves as well as seven 10-inch all welded orifice flanges. On the whole installation are 120 all-welded steel flanges. It weighs over 40,000 pounds.

Adaptability of the shielded arc technique is shown by the variety of pipe sizes. The regulator consists of 45 feet of 16-inch pipe, 22 feet of 12-inch pipe, 159 feet of 10-inch pipe, 40 feet of 8-inch pipe, 80 feet of 6-inch pipe, 71 feet of 3-inch pipe and 20 feet of 2½-inch pipe.

The Ohio Fuel Gas Co. is an extensive user of welding and is equipped with standardized arc welded jigs and fixtures for production of fittings. Flanges are cut by gas on an arc-welded automatic set-up and held in position on a special fixture. All pressure welding is done with the shielded arc "Fleetweld" electrode and "Stable Arc" welders of the Lincoln Electric Co. of Cleveland, Ohio.

SPECIAL GAS CYLINDERS

The Linde Air Products Co., 30 East Forty-second Street, New York, has announced it is in a position to supply a full line of cylinders for the transportation of refrigerant gases such as sulphur dioxide, methyl chloride, ethyl chloride, isobutane, butane and propane. The cylinders are suitable for portable or stationary use and are made in accordance with the rules and regulations of the Interstate Commerce Commission.

The Griscom-Russell Co. has removed its Dallas, Tex., office to 501 Tower Petroleum Building.

Bridgeport Has Its Silver Anniversary

Manufacturer of Swan Underreamer and Other Widely Known Oil Field Equipment Rounds Out Quarter Century of Service

By Jack Kolthoff

Come back with me to the early days of the present century. On this bright May morning, let's get out the old "one lunger"—aristocrat of transportation of those days—and take a trip to the little town of Bridgeport, Ill. This pretty little town, located in the south central part of Illinois, has followed the even tenor of its ways for many years—its citizens going about their peaceful pursuits from day to day, untroubled by booms or industrial strife.

Almost overnight, however, the complexion of Bridgeport changed. Where once its "old timers" sat around the cracker barrel in the village store, discussing the politics of the day; where once a farmer's sleepy horse or two dozed at the hitching racks, awaiting completion of the master's shopping; where in former days the whole town dozed in the tranquil somnolence under the warm southern Illinois sunshine; now all is bustle and activity. The streets are crowded with an entirely different type of men—each hurrying about his own particular business. An air of excitement pervades the atmosphere—the lure of "big money" is in the air, and Bridgeport has been aroused as never before. For oil—the black gold of the rolling hills and prairies of the central states, has been discovered near Bridgeport, and countless hordes of eager fortune seekers have invaded the little village, to disturb its serenity. No more is politics the principal topic of discussion; on every hand the talk is of oil, and its vast wealth producing potentialities.

Accommodations in hotels and rooming houses are at a premium—business in the retail stores has trebled and quadrupled, and Bridgeport's merchants are happy. Prices are going up, but who cares? There's plenty of money on every hand to buy.

Big Possibilities Seen

As one well after another "hit the pay" in the southern Illinois Field, and the oil business in all its ramifications became Bridgeport's leading industry, scores of new faces and new companies appeared in the locality. While the majority of men bent their energies to the production of oil, a few others—men of vision and sound judgment—realized the tremendous possibilities in taking care of the necessities which the drilling of oil wells required. The care of the tools, which constantly need attention, is one big problem.

To this problem two men gave their attention, J. A. (Jim) Woods and E. W. (Ed) Boyd. Combining their capital and efforts, they started a little machine shop in Bridgeport. Thus the Bridgeport Machine Co., which this year is celebrating its silver anniversary, came into existence. Both capable, practical men, who devoted their entire thought and attention to their business, the little machine shop rapidly grew in favor, and as long as the activity in the southern Illinois field continued, Woods and Boyd enjoyed a constantly increasing patronage. From 1907 to 1916 the company prospered in its original location.

Then came the big strike in Butler County, Kansas, and with the output of the southern Illinois field diminishing, the partners decided it was time to move into new and larger fields of endeavor. To Augusta, Kans., in the center of the Butler County Pool, came the Bridgeport Machine Co.—and history repeated itself. With their 10 years of experience, Woods and Boyd were well equipped to give the right kind of service to their new field.

In the new and larger Butler County Field, however, new problems arose. More and more frequently tools were lost in the hole, and entailed expensive fishing jobs. Woods and Boyd anticipated the demand for better quality fishing tools, and devoted their thought and energies to producing them.

Bridgeport's Business Expands

Soon the fame of Bridgeport fishing tools spread beyond the Butler County Field, and from a small local business, the Bridgeport Machine Co. found itself rapidly expanding, and in a short time its business became national, and even international in its scope.

The next big demand to arise in the oil industry was for an efficient underreamer. Some years before, in Marietta, Ohio, Dr. J. C. Swan had started to experiment on a new type of underreamer, and finally developed a device which met all requirements. This underreamer was called the Swan, and it was being manufactured by Doctor Swan and his associates.

In 1918 Mr. Woods, visualizing the possibilities for a tool of this type, opened negotiations with Doctor Swan for the purchase of his tool and company, and finally succeeded in acquiring the business, which he consolidated with Bridgeport. Under Mr. Woods' practical guidance, the Swan underreamer was further perfected.

While in Augusta Mr. Woods became acquainted with a local banker, and about 15 years ago this banker, A. A. Buschow, at Mr. Woods' invitation, severed his connection with the banking industry, and threw in his fortunes with the Bridgeport company. And a splendid team these two men made—one a practical, experienced oil field man, the other an executive and financial wizard. For nearly 14 years these two men guided the fortunes of Bridgeport to one triumph after another. In 1922, with the rapid discovery of many new oil fields all over the Southwest, the company's headquarters were moved to the larger city of Wichita, Kans., nearby, where better transportation facilities, a larger labor market, and many other advantages were available.

Bridgeport Perfects Hycrome Process

As the frenzied search for black gold went on, and wells were sunk deeper and still deeper into the earth's crust, additional problems arose to confront those men who provided the requisite tools. The next big demand was for better drilling tools. Again Bridgeport anticipated the demand, and perfected the Hychrome process of hardening, which has become so internationally popular that one of the largest oil companies, in sending out bids for tools some time ago, specified "Hychrome, or the equal thereof."

But here a human element entered into Bridgeport's fortunes. As so often happens, men's ambitions and desires change. For quite a few years, the fascination of the actual production of oil had steadily grown on Jim Woods. Gradually he had acquired interests in various oil fields. When the big East Texas Field was discovered, he could not resist the urge to cast his fortunes with it. Mr. Woods' acquired large holdings in that field, which took more and more of his time and attention. Mr. Buschow, on the other hand, had in the meantime demonstrated his genius and his unquestioned ability to lead the Bridgeport organization. He was elected to the presidency of the company, and for a time Mr. Woods acted as chairman of the board of directors. Within the past two years, however, Mr. Woods found that his production interests required all of his attention, and in justice to Bridgeport, as well as to himself, he finally decided to sever all connections with the Bridgeport company. His interests were taken over by Mr. Buschow and his associates.

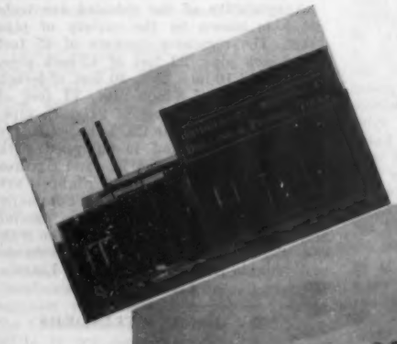
Develops New Rotary Tools

Under the capable direction of Mr. Buschow, Bridgeport has continued its steady march of progress. When the rotary method of drilling became popular, and special rotary tools grew in demand, Bridgeport was again ready to meet that demand with its new and highly efficient rotary tools. During the recent past, when it became increasingly necessary to produce oil with greater economy, Bridgeport offered new merchandising methods, which included not only lowered overhead in selling methods, but also the development of Bridgeport's method of reconditioning used tools, putting these tools wherever necessary through its own shops, and reconditioning them to a point where they could be depended upon to render efficient service, and offering these reconditioned tools to the trade, a saving of hundreds of thousands of dollars to the oil industry—at a time when such savings were of fundamental importance.

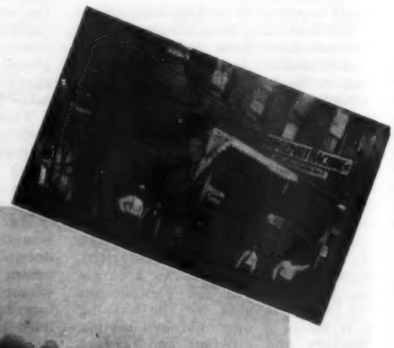
At the same time, Mr. Buschow has succeeded in maintaining the company on a solid financial structure which has brought commendation from the country's leading financiers and business executives.

Thus Bridgeport, which is rounding out a quarter century of service, goes steadily onward, enlarging its scope of service to the oil fraternity everywhere—a stable, permanent fixture which is a credit to one of the world's greatest and most essential industries.

On page 88 and the inside back cover of this issue will be found an outline of the various types of service which the Bridgeport Machine Co. now offers to the oil industry.



At Left—The Bridgeport plant at Augusta, Kans.



At Right—The first Bridgeport shop at Bridgeport, Ill.

Below—The present Bridgeport plant and general offices at Wichita, Kans.

VIEWS OF THE BRIDGEPORT MACHINE CO.'S PLANT, WHICH STARTED 25 YEARS AGO WITH A LITTLE MACHINE SHOP

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Tulsa, Oklahoma

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Responsible operating company has a number of electric driven Worthington high pressure compressors, suitable for Oklahoma City Gas Lift. Reasonable price. Address P. O. Box 2420, Tulsa.

EQUIPMENT WANTED

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BUSINESS OPPORTUNITIES

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WANTED—Brokers and salesmen in all the Cities in U. S. and Canada to cooperate with me in selling producing and nonproducing royalties at the right prices, located in the hot areas in Oklahoma, Kansas and Texas. Chances for big profits; send today for lists and maps. James R. Haynes, Grantville, Kansas.

PIPE LINE AND PRODUCTION
We check shortage. Make necessary investigations. Thirty years' experience. Consultation confidential. Charges reasonable. Box F-171, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Connection with refinery on tank car gasoline sales for central & northern Minnesota by oil company contacting two hundred jobbers. Prefer some refinery not being represented in this territory. Address Box F-190, The Oil and Gas Journal, Tulsa, Okla.

SITUATIONS WANTED

REFINERY MAN—Eleven years' laboratory and plant experience with modern refinery equipment. Desire connection with equipment manufacturers or with refinery. References. Available immediately. Address Box F-183, The Oil and Gas Journal, Tulsa, Okla.

STORES OR PURCHASING EXECUTIVE
Experienced Buyer, warehouseman, stock control, salvage recovery, M & S accounts. Good health and references. Address Box F-182, The Oil and Gas Journal, Tulsa, Okla.

SUPERINTENDENT of construction or operation of small refinery now open for employment. Address Box F-181, The Oil and Gas Journal, Tulsa, Okla.

OIL CHEMIST, 24, single, B. S. in Chem. Eng. from Eastern Univ. Experienced in analytical oil chemistry, crude assay and contacting clays. Desires position in process department. Location immaterial, salary secondary. Address Box F-170, The Oil and Gas Journal, Tulsa, Okla.

WANT POSITION—Oil, gas and mineral locator; I guarantee satisfaction or no pay. Frank Draper, Seymour, Iowa, R. No. 3.

WISH to get in touch with independent refiner wanting sales representative in Nebraska or contiguous territory on brokerage or commission basis. Ability to make prompt shipments as well as dependability of quality and prices essential. Address Box F-191, The Oil and Gas Journal, Tulsa, Okla.

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White City	Hillsboro
Wilsey	Peabody
Delavan	Florence
Lost Springs	Moline
Tampa	Bonner Springs
Ramona	DeSoto
Lincolnville	Eudora
Aulne	Lake of the Forest
	Garnett

Missouri

Liberty	Smithville
Avondale	Plattsburg

Residences along the highway beyond the city limits of North Kansas City, also served.

All private bids to be sealed, all matters to be subject to approval of the Referee in Bankruptcy, at a creditors' meeting to be held on June first at 10 o'clock A. M., at the office of the Referee in Bankruptcy, 715 Grand Avenue, Temple Building, Kansas City, Mo.

For particulars address James B. Nourse, trustee in bankruptcy, 720 Commerce Building, Kansas City, Mo.

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OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

ROYALTIES—PRODUCTION

MONTHLY INCOME-PAYING Royalties under Oklahoma City and Seminole Wilcox Sand wells offered. W. E. Cook, 342 Court Arcade, Tulsa, Oklahoma.

ROYALTIES in the territory of coming big development in Kansas, Stafford, Barton, Ellsworth, Kingman and Stevens Counties, core drilled. Also producing royalties. Special service to brokers. Send for list. James R. Haynes, Grantville, Kans.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood, P. O. Box 2261, Tulsa, Okla.

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CHEAP ROYALTIES—Shell-Humble midwest Blocks, Kans., Okla., Texas. Big list, agents wanted. Harry Haynes, Grantville, Kans.

ROYALTY and leases Goliad County, Texas, close up to Humble location on huge core drilled block. James R. Haynes, Grantville, Kansas.

PRODUCING OIL ROYALTIES
Henry S. Severson, Court Arcade, P.O. Box 1341, Tulsa, Okla.

Dealer in Odd Lots
PRODUCING OIL ROYALTIES
I Buy and Sell
John L. Dickson, Box 1113, Tulsa, Okla.

ROYALTIES, leases—blocks—lands in fee, close to school and college. D. J. Perry, Edmond, Okla.

LEASES—PRODUCTION

TERRELL COUNTY, TEXAS, 88 form Oil and Gas Lease. Forty acres, Section 53-D.6. Twenty-year lease, 14 years more to run. All rentals paid. Must sell. Mr. C. Christianson, Hotel Atlanta, Seventh and Mission Sts., San Francisco, Calif.

10 TO 160 ACRES near East Texas operations $2.50 to $10 likely to be worth $500 acre shortly. You can make plenty money if buy right class property. E. Croft, Proctor, Texas.

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10,000 ACRES for 3,500-ft. well Yalobusha County, Mississippi. Best wildcat structure entire United States. 1 yr. free, 25c rentals. 223 Court, Memphis, Tenn.

MR. BROKER AND INVESTOR
Inquiries for leases, Royalties, Drilling Blocks and Oil Payments solicited. W. R. Miller, 1216 Hurley Ave., Ft. Worth, Tex.

WILL SELL 40 acres of my 80-acre lease close to deep test drilling in S.E. Oklahoma. Address Edythe Burnham, 312 Walnut St., Texarkana, Ark.

TEXAS PANHANDLE Gas Production and Royalties is my Hobby—get my prices. Wire or write. E. B. Reeves, Box 13, Alanreed, Gray County, Texas.

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NEW MEXICO Oil Leases, Lands and Royalties. Free State Map and information. Roy G. Barton, Clovis, New Mex.

HAVE several thousand acres POTASH lease located Southeast New Mexico, wish to make connection with party to core drill this. Roy G. Barton, Box 191, Clovis, New Mexico.

HUTCHINSON COUNTY, TEXAS—Would lease 80 acres, half mile from production, on contract to drill at once. Bonus out of oil & gas—no cash. Address Box F-192, The Oil and Gas Journal, Tulsa, Okla.

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Taylor Forge & Pipe Works ....
Texas Electric Service .....
Timken Roller Bearing Co., The..
Toledo Pipe Threading Machine Co.
Trackson Co. 84
Tretolite Co. .....
Trimont Mfg. Co. .....
Truscon Steel Co. .....
Tube Turns, Inc. .....

U

Union Wire Rope Co. .....
Universal Oil Products Co. 19

V

Vellumoid Co., The .....
Vogel, Felix A. 65
Vogt, Henry, Machine Co. 2

W

Wailes Dove-Hermiston Corp. ...
Westco Pump Corp. 44
Wickwire Spencer Steel Co. 76
Williamsport Wire Rope Co. ....
Winkler-Koch Engineering Co., The
Worthington Pump & Machinery Corp. .....

Y

Youngstown Sheet & Tube Co., The 40A

Take Your Troubles FIRST to a Bridgeport Man

Wherever you are operating in the Mid-Continent Field, you will find a trained Bridgeport man close to you, whose many years of experience are always at your call. No matter what your trouble, you will find Bridgeport's service man willing and anxious to help you—regardless of whether it means an order for him or not.

Get acquainted with your nearest Bridgeport representative—you will find his friendship of real value to you.

Bridgeport Offers You Only the Best in Dependable Oil Field Products

In the following list of products handled through Bridgeport, you will find many of the industry's best known and most dependable oil field products.

AQUAGEL (The best colloidal drilling mud) (Prevents lost circulation) (Prevents stuck Drill Pipe and Casing)

BAROID (Provides mud weight) (Is non-settling in well or pits) (Prevents gas cutting)

Hughes Tool Products - - - Allis Chalmers Electrical Oil Field Equipment. Williamsport Wire Rope—Rotary & Cable—Wall Rope Cordage. New York Rubber Company Belting & Wiecapee Rotary Hose - - - Lucey Rotary Equipment. Reed Roller Bit Products - - - Guiberson Disc Bits and other products. Larkin Rotary Hole Equipment - - - W.K.M. Rotary Slips. Champion Barber Steel Rotary Hose - - - Larkin Sand Pumps. Link Belt Rotary Chain - - - Cameron Iron Works Blow-Out Preventers. D & M Slush Pump Pistons & Rods - - - Martin-Decker Weight Indicators. Butler Manufacturing Company equipment - - - Spang Weldless Jars - - - Boss Hose Couplings. Moon Generators - - - Jones Sucker Rods - - - Byron-Jackson Company Products. Pittsburgh Seamless Drill Pipe & Casing - - - South Chester Tube Company Products. Wheeling Steel Corporation Products.

Bridgeport's Dependable Used Tool Department

In every Bridgeport Branch Store you will find a Reconditioned Tool Department. The tools sold in this Department are all thoroughly reconditioned, wherever needed, in Bridgeport's own shops, and sold to you with Bridgeport's service guarantee. In most instances they will give just as good service as a brand new tool—and of course you can make a material saving on them.

This is just another evidence of Bridgeport's desire to be of real service to its host of friends and customers, and to save them all the money possible at all times.

Have you received YOUR FREE COPY of Bridgeport's latest bargain list? If not, write us for it at once. Address the Wichita office.

The BRIDGEPORT

WICHITA,

BRANCHES CONVENIENTLY LOCATED IN ALL